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Environmental Impact Statement

Alaska Regional Plan

ALASKA REGIONAL PLAN

AUGUST 1981

Responsible Agency:	USDA Forest Service
Responsible Official:	R. Max Peterson, Chief USDA Forest Service
For Further Information Contact:	USDA Forest Service Alaska Region, Office of Information ATTN: Public Participation Coordinator Federal Office Building P. O. Box 1628 Juneau, Alaska 99802

Comments on this Draft Environmental Impact Statement must be postmarked by November 6, 1981. Mail all comments to the above address.

Abstract:

In response to National Direction from the Chief of the Forest Service and the 1980 Recommended Renewable Resources Program (RPA) and in compliance with the National Forest Management Act (NFMA) and National Environmental Policy Act (NEPA) the Alaska Region proposes alternative standards and guidelines for certain management practices described in the DEIS and courses of action to resolve significant issues, concerns and opportunities brought to light through public participation within the Alaska Region. The Forest Service preferred alternatives are identified for the following: appropriate systems of silviculture, maximum size of created openings, dispersal and size variation of tree openings created by even-aged management, state of vegetation that will be reached before a cutover area is no longer an opening, management intensity, utilization standards, biological growth potential for determining capability of land for timber production, unit of measure for expressing mean annual increment, transportation and utility corridors, and air quality. This Draft Environmental Impact Statement is a companion document to the Draft Alaska Regional Plan which contains a Summary of the Analysis of the Management Situation, Regional Goals and Objectives, Distribution of Resource Targets to the Forests, Standards and Guidelines and Monitoring and Evaluation Requirements.

SUMMARY

The Alaska Regional Plan conveys management direction from the National level to the Tongass and Chugach National Forests.

This Draft Environmental Impact Statement documents the environmental analysis of the alternatives considered for providing management direction in the Regional Plan and their environmental effects. The Draft Environmental Impact Statement includes by reference minor clarifications or elaborations of the Southeast Alaska Area Guide policies which were found to be applicable to all of the Alaska Region (Appendix 1).

The following public issues and management concern are discussed:

Public Issues:

- Possible Adverse Impacts to Fisheries from Timber Harvest

- Conflicts Between the Harvest of Old Growth Timber and Wildlife Habitat

- Designation and Management of Wilderness

- Concern About How Much Timber Production Can Be Sustained on National Forest Lands

- Concern About Economic Development and Social Stability

- Development of Energy and Mineral Resources

- Changes in Recreation Opportunities and Visual Resources

- Transportation Connections Between Communities and Management of Potential Transportation Corridors

Management Concern:

- Need to Revise the Southeast Alaska Area Guide Policies to Conform to New Legislation, Permit More Uniform Application on the Ground and to Respond to Public Issues

The policies in the Southeast Alaska Area Guide were analyzed for their adequacy and the extent to which modification or a new policy would contribute to issue resolution. If the intent of the policy was correct, but minor clarification or elaboration was needed, then the modification was made without detailed analysis in the Environmental Impact Statement. Those policies that needed major modification have been analyzed in detail.

Alternative Standards and Guidelines

During the issue screening process, a number of broad alternatives were

- Complete revision of the Area Guide
- Not incorporating the Area Guide into the Regional Plan
- Complete implementation of the Alaska Lands Act
- Land allocation on the National Forests
- Additional wilderness classification
- Alternative RPA resource targets
- Detailed process guidance

Ten sets of alternative standards and guidelines (policies) have been developed. For each policy as many alternatives were developed as necessary to analyze the policy. In each case, Alternative A is the existing direction in the Southeast Alaska Area Guide. In some instances, only one alternative is proposed where, in the professional judgment of the Forest Service, there were no other alternatives at this time for the Region.

1. Appropriate Systems of Silviculture

Four alternative systems of silviculture are considered, ranging from prescribing even-aged management for all species to prescribing uneven-aged management for all species. The preferred alternative clarifies concepts in policies of the Timber Account of the Area Guide. In this alternative, even-aged management is the prescribed silvicultural system for all species, except where uneven-aged management is needed to meet other objectives. Clearcutting to regenerate an even-aged stand will be used as a cutting method only where such practices are determined to be optimum to meet objectives and requirements of the Forest land management plan, and can be carried out in a manner consistent with the interdisciplinary process for the protection of soil, watershed, fish and wildlife, recreation, aesthetic resources and maintain the timber resource in a productive state. Regeneration cutting methods and silvicultural standards for Alaska coastal forest types are presented in full in Chapter V of the Regional Plan.

2. Maximum Size of Created Openings

Four alternatives are considered with a range of 75 to 160 acres as the maximum size of created openings. The preferred alternative specifies a 100 acre limit on created openings for all forest types. The established limits do not apply to areas harvested as a result of natural catastrophies. Other exceptions to the established limits may be allowed by the Regional Forester an individual basis following consideration of a set of factors and a 60 day public review period.

Management

Compared with Area Guide policies, the preferred alternative provides a more comprehensive description of considerations to be made in long and short term planning. Distribution of openings over time will conform to a total compartment multi-entry plan and be scheduled taking into consideration the assumptions and objectives in the allocation of the Forest land management plan. Characteristics to be identified and delineated in the multi-entry plan are listed. Factors to be considered on a individual sale basis which detemine shape and dispersal of created openings are listed.

4. State of Vegetation That Will Be Reached Before a Cutover Area is No Longer Considered an Opening

There are no policies in the Area Guide to serve as current guidelines. Two alternatives are discussed. One requires that each created opening be associated with one of the following three primary considerations: appearance, wildlife habitat and silviculture, and that criteria associated with the selected consideration serve as guidelines. The alternative which is preferred states that created openings will cease to be openings when areas are adequately stocked with desireable tree species which are approximately five feet in height according to silvicultural surveys. The height/density requirements may be adjusted by the Forest Supervisor to meet specific resource management considerations.

5. Biological Growth Potential

A single alternative is discussed. It states that forest lands are considered capable of timber production when the biological growth potential exceeds 20 cubic feet per acre per year partial stem volume (stump height to DIB).

6. Management Intensity

The preferred alternative expands the Area Guide policies to reflect legislation and Congressional intent of RPA, NFMA and the Alaska Lands Act for the improved production and protection of the timber supply. This alternative includes guidelines for the selection, scheduling and implementation of silvicultural practices including stand examinations.

7. Utilization Standards

The preferred alternative represents current utilization trends, market conditions and technological state-of-the art with the intent to promote the best use of wood production. Utilization standards are provided for regenerated stands and old growth stands of merchantable timber. These will be reviewed of periodically. Guidelines for yarding, scheduling, contracting and utilization of other material are listed. Recent distribution of cant and pulp production is discussed in Chapter IV.

The unit of measure will be based on cubic foot volume. The Area Guide policy on the use of culmination of mean annual increment is updated by the preferred alternative.

9. Transportation and Utility Corridors

The preferred Alternative requires that corridor planning and development comply with standards and guidelines of other resource elements. Coordination requirements with Canadian, Federal, State and other government agencies, communities, private land owners and affected individuals are listed. Transportation and utility corridor planning will be integrated with land management plans to the extent feasible. Utility corridors will follow land transportation routes to the extent procticable and appropriate.

10. Air Quality

One alternative is discussed. Smoke management will be coordinated with the Alaska Department of Environmental Conservation.

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CHAPTER I - PURPOSE AND NEED

The purpose of the draft environmental impact statement is to display and analyze the environmental impacts of alternative standards and guidelines proposed to respond to major public issues and management concerns identified through the public scoping process. It also provides an opportunity for public review and comment.

The draft EIS provides information concerning the analysis of proposed major changes to existing standards and guidelines (policies) and does not contain a detailed analysis of the management situation. (A summary of the analysis of the management situation is contained in draft Plan Chapter II.)

The draft Regional Plan is intended to stand as a summary document containing information on Forest Service management for Alaska; it does more than display proposed decisions. It displays information that has been analyzed in other environmental review processes and displays previous decisions. These include RPA program and budget, the Southeast Alaska Area Guide, the National Forest Management Act Regulations (36 CFR 219), and the Alaska Lands Act.

The draft EIS also includes by reference those policy modifications which required minor clarification or elaboration of the existing Area Guide policies which were found to be applicable to all of Alaska (Appendix 1). The Area Guide was developed in 1977 to guide the preparation of the Tongass National Forest Land Management Plan. It was soon recognized as containing policies generally of regional scope and was formally extended by the Regional Forester to cover the Chugach National Forest. A formal environmental impact statement was not prepared solely for the Southeast Area Guide. However, there was intensive public participation in the development of the Guide. (Refer to the Guide and draft and final Tongass Land Management Plan environmental statements for details of this process.) The process used to develop the Area Guide paralleled the NEPA process. There has been widespread support for the Guide which has been in use and working for over four years.

Issue Identification

The Regional Plan Interdisciplinary Team (IDT) prepared a list of issues from review of 11 previous planning documents and discussions with agency representatives from the State of Alaska. These issues were refined to a list of seven major questions. A list of management concerns was also prepared from the input of Forest Service staff and management.

The list of issues and concerns was put out for public review and comment in a planning newsletter in February of 1980. Public comments were reviewed and analyzed. There was a scarcity of responses from representatives of other Federal agencies and Native corporations so contacts were made in May and June of 1980 to solicit input for the Regional Plan. Because regional planning questions were clouded by an

overriding public concern about the Alaska Lands Bill then before Congress, and the impending expiration of the withdrawals under the Federal Land Policy and Management Act, the regional planning process was suspended in June of 1980.

The process was reactivated immediately after passage of the Alaska Lands Act in December of 1980. The IDT met to reconsider the issues and management concerns. The public commented on the inadequacy of the original seven planning questions through responses to the February newsletter, and provided other issues and concerns, many of which were detailed or specific statements falling under one of the original seven headings.

A list of issues and concerns was developed from the Southeast Alaska Area Guide, summary of public comments on the February newsletter, summary of the May/June 1980 external coordination efforts, and more recent correspondence and contacts with the public, representatives of the State of Alaska and other Federal agencies. The issues were evaluated against the following criteria to determine which issues/concerns would be used to guide preparation of the regional plan:

1. The issue affects or is affected by Forest Service activities; or the issue cannot be readily resolved witnout Forest Service involvement;

2. The issue is regional in scope and cannot be resolved in either a Forest plan or at the national level through the RPA process; and the issue can be at least partially resolved within the existing authority of the Regional Forester.

3. The issue involves significant resource conflicts; major economical, social, or environmental implications; or there is a high level of public interest in the issue.

The following issues and management concern were identified from the review and analysis:

Public Issues:

- Possible Adverse Impacts to Fisheries from Timber Harvest

- Conflicts Between the Harvest of Old Growth Timber and Wildlife Habitat

- Designation and Management of Wilderness

- Concern About How Much Timber Production Can be Sustained on National Forest Lands

- Concern About Economic Development and Social Stability

- Changes in Recreation Opportunities and Visual Resources

- Transportation Connections Between Communities and Management of Potential Transportation Corridors

Management Concern:

- Need to Revise the Southeast Alaska Area Guide Policies to Conform to New Legislation, Permit More Uniform Application on the Ground and to Respond to Public Issues.

The policies in the Southeast Area Guide were analyzed for their adequacy and the extent to which modification or a new policy would contribute to issue resolution. If the intent of the policy was correct, but minor clarification or elaboration was needed, then the modification was made without detailed analysis in the Environmental Impact Statement. Those policies that needed major modification have been analyzed in detail in the Environmental Impact Statement.

In the summary of the issues below, we have indicated the disposition of each issue and the role it plays in the Regional Planning process.

Issue: Possible Adverse Impacts to Fisheries from Timber Harvest

There is public concern about possible adverse impacts to anadromous fisheries from timber harvest operations.

Some of these impacts can be water quality (sedimentation) changes, stream temperature changes, and in-stream debris. Adverse impacts can be minimized through proper road, harvest unit, and facility design and location, and through implementation of existing policies, standards and guidelines.

Policies in the Regional Plan under the Fish, Timber, Soil and Water elements provide protection for anadromous fish habitat. Many policies in the Southeast Alaska Area Guide which are prescriptive have been referred to Forest planning. Analysis led to the conclusion that no major changes in regional-level management direction are necessary. Standards and guidelines in the National Forest Management Act and the Alaska Lands Act also provide for habitat protection.

have a serious adverse impact on some species of wildlife, especially Sitka black-tailed deer. Cutting old growth forest stands under a 100-125 year rotation harvest schedule is necessary to meet the 4.5 billion board feet harvest per decade required by the Alaska Lands Act.

The Alaska Department of Fish and Game has stated that harvesting old growth forests by clear-cutting causes a permanent loss of habitat for some species of wildlife such as black-tailed deer, mountain goat, Vancouver Canada goose and bear. Under the current 100-125 year rotation schedule, the Department states that old growth forest habitat is an irretrievable resource and will cause a permanent reduction in those species dependent on this habitat. The Department has requested that future harvest of old growth stands supporting 50 thousand board feet per acre be halted and retained for wildlife purposes. The State Boards of Game and Fish have supported this request in a joint resolution adopted in December, 1980 (Appendix E).

Research conducted jointly by the Department of Fish and Game and the Forest Service Forestry Sciences Laboratory (on Admiralty and Chichagof Islands) describes the relationship of Sitka black-tailed deer to old growth forest and dependence on this habitat during the winter. The large crowns and heavy limbs of the trees in the old growth forest act as snow interceptors during heavy winter snowfalls and prevent accumulations of deep snow cover on the forest floor. This allows the deer easy access to understory food plants and conserves energy during the critical winter period.

Information from the Queen Charlotte Islands in British Columbia, Canada, and from other islands in Southeast Alaska -- Sokolof, Kiesnoi, and Level Islands -- indicates that the dependency on old growth forests may be lessened somewhat where the maritime climate predominates. Also, the influence of timber harvesting on predator prey relationships has not been detrimental insofar as deer (prey for wolves, primarily, and to a lesser extent both black and brown bear) are concerned.

Resolution of this issue is not within the scope of the Regional Plan. The Forest Service is fully committed to working with the Department of Fish and Game in trying to resolve the issue and will join with the Department in analyzing the consequences of deferring harvest of high volume old growth timber and other areas of high wildlife value to allow time for gathering additional information.

(See Appendices E, F, and G of the Draft Regional Plan for official statements.)

There is a public concern about the amount of wilderness to be designated in Alaska and how wilderness areas should be managed.

The Alaska Lands Act established National Forest Wilderness in the Tongass National Forest. Section 706(b) of the Act requires the Forest Service to review and report to Congress every two years on the status of the Tongass National Forest. The impact of wilderness designations on the timber, fishing and tourism industry in Southeast Alaska is to be included in the reports to Congress.

Wilderness studies are being conducted on approximately five million acres of the Chugach National Forest as part of the Forest land management planning process.

Management policies in the Regional Plan reflect the Forest Service policy changes necessary to comply with the Alaska Lands Act and the Wilderness Act of 1964 (as amended by the Alaska Lands Act). Further management guidelines will be prepared as needed as part of Forest Land Management Plans.

Issue: Concern About How Much Timber Production Can Be Sustained On National Forest Lands

The broad issue of timber supply centers on three interrelated public concerns including the role of: (1) newly acquired State and Native lands in meeting wood supply versus supply demands from National Forest lands; (2) non-declining even flow timber yield versus departure from that standard; (3) wood fiber export versus local processing (involves balance of payments).

Existing legislation, including the Alaska Lands Act and the National Forest Management Act, has resolved (1) and (2). The timber supply from Tongass National Forest lands is mandated by the Alaska Lands Act. (Additional volume could come from State or Native lands.) Departure from non-declining flow may be considered at the Forest Planing level (36 CFR 219.12). The concern mentioned in (3) is also considered beyond the scope of this plan as existing and historic policy has been to restrict large scale export of most species. Any change in policy would be a separate decision involving public input in the decision making process. This issue is not addressed in the EIS.

Issue: Concern About Economic Development and Social Stability

Public concern was expressed about the support Forest Service programs provide to local employment and social stability. There was concern for balance of local needs against national and regional demands for commodity and amenity-related programs.

Area Guide policies as revised in the Regional Plan address this concern. The Alaska Lands Act also provides direction.

Issue: Development of Energy and Mineral Resources

There is public concern about the need for development of energy and mineral resources in Alaska, and potential adverse environmental impacts.

Regional Plan policies from the Southeast Alaska Area Guide provide for mineral exploration and development with environmental safeguards. The Alaska Lands Act mandated mineral exploration and development.

The public scoping process showed the withdrawals under the Federal Land Policy and Management Act as the primary concern under energy and minerals. The Alaska Lands Act resolved this issue. Analysis led to the conclusion that with the withdrawal question resolved, existing policy was sufficient to address this issue at a regional level.

Issue: Changes in Recreation Opportunities and Visual Resources

There is public concern about changing recreational opportunities and visual resources in areas primarily outside of wilderness (see Analysis of the Management Situation).

Alternative standards and guidelines developed for the ten policy topics in the EIS (see EIS Chapter IV) were evaluated for their ability to alleviate impacts of development on recreational opportunities and visual resources. Forest plans and project plans will provide detailed direction for implementation of the policies in the Regional Plan.

Issue: Transportation Connections Between Communities and Management of Potential Transportation Corridors

Two issues of transportation seem to be very active in people's minds: 1) transportation connections between communities; and 2) the land management policies of National Forest lands along potential transportation corridors.

The Forest Service, in the course of developing a transportation system to support land management plans, has the ability to help facilitate community connections in many situations, particularly between the smaller communities of Southeast Alaska. The State of Alaska and communities involved have a strong interest in these connections particularly from a community-development and road-operation/maintenance point of view.

Transportation corridors usually involve construction of roads and utility lines along major rivers or the inland waters. Those corridors, with high fisheries, wildlife, estuarine, and other values pose conflicts with the construction and usage of major transportation systems. Alternative standards and guidelines were proposed to address this issue and are analyzed in the EIS.

Management Concern: Update of Southeast Alaska Area Guide.

The Southeast Alaska Area Guide, which has served as a de facto Regional Plan since 1977, needs revision to reflect new legislation, to permit more uniform application on the ground, and to respond to public issues.

Public comments received during 1980 public participation activities for the Regional Plan identified implementation and monitoring as an issue. The concern also surfaced in contacts made with other Federal agencies, State agencies and Native corporations. In essence, reviewers said that the Forest Service develops good plans and policies but these appear to get lost in the implementation process.

The policies in the Southeast Alaska Area Guide have served as the foundation for the Regional Plan standards and guidelines. Alternatives were proposed and evaluated for the standards and guidelines required by the National Forest Management Act Regulations. Minor changes were made in Area Guide policies in the Regional Plan. Major changes are proposed through the environmental statement process for the following ten standards and guidelines:

Appropriate Systems of Silviculture

Maximum Size of Created Openings

Dispersal and Size Variation of Tree Openings Created by Even-Aged Management

State of Vegetation That Will Be Reached Before a Cutover Area is No Longer an Opening

Biological Growth Potential for Determining Capability of Land for Timber Production

Management Intensity

Utilization Standards

Unit of Measure for Expressing Mean Annual Increment

Transportation and Utility Corridors

Air Quality.

In summary, eight issues and one management concern were identified to guide preparation of the Regional Plan. When evaluated against existing policies from the Southeast Area Guide and the Alaska Lands Act, three areas of concern required major policy changes to resolve:

1. Transportation connecting between communities and management of potential transportation corridors

2. Need to revise the Southeast Alaska Area Guide to conform to National Forest Management Act requirements

3. Conflict between harvest of old growth timber and wildlife habitat.

Alternative policies were developed and analyzed in the EIS to address the first two issues. The Forest Service will work with the Alaska Department of Fish and Game to resolve the old growth timber issue. A positive course of action is outlined, but issue resolution will take place outside the Regional Plan/EIS process.

Introduction

This chapter outlines the alternatives considered during the Regional planni process. It is divided into two sections: A Alternatives considered, but eliminated from detailed study, and B Alternatives considered in detail. Section A is limited to a general discussion of types of alternatives that were considered during the process. Section B discusses alternative standar and guidelines for 10 policies.

A. Alternatives Considered but Eliminated from Detailed Study.

During the issue screening process, a number of broad alternatives were eliminated from detailed study because they were beyond the scope of environmental analysis of the major alternative standards and guidelines. They were:

Complete Revision of the Area Guide. The interdisciplinary process followed National requirements for identification of public issues and management concerns. The nine identified issues and concerns were used to guide the planning process. As explained in Chapter I, analysis of the issues, legislation, and existing policy showed that major policy changes were not needed to address six of the eight issues. These had been adequately addressed by existing policies and the Alaska Lands Act or would be addresse in a process outside of the Regional Plan. Simply stated, numerous Guide policies remain as effective standards or guidelines in the resolution of th specific problems which they address.

Not Incorporating the Southeast Area Guide into the Regional Plan. The Area Guide essentially served as a Regional Plan, having substantial support from among the various publics, organizations, and agencies which participated in its development. Regional level material from the Guide was incorporated in the Regional Plan for several reasons:

1. The Guide served as direction for development of the Tongass Land Management Plan.

2. It guided management on the Tongass and Chugach National Forests.

3. The revised Forest Service planning process (36 CFR 219) requires th development of standards and guidelines in Regional and Forest Plans.

4. Since their preparation, some Area Guide policies have been determin to need modification or clarification in order to better address public issu and management concerns at the Regional Plan level. Subsequent adoption of the National Forest Management Act regulations and Congressional passage of the Alaska Lands Act mandate several policy changes not clearly anticipated during preparation of the Area Guide.

considered incorporating all policies and regulations required by the Alaska Lands Act in the Regional Plan. Refer to Appendix D of the Regional Plan for a discussion of items to be implemented. This alternative would delay the Regional Plan for an indefinite period of time while all of the requirements were being fulfilled. The Regional Plan contains the language of the Alaska Lands Act as appropriate and is consistent with the Act.

The delay required to incorporate the Alaska Lands Act requirements into the Regional Plan would either delay completion of the Chugach Forest Plan, or require that the Chugach Plan be completed prior to completion of the Regional Plan. The decision, therefore, was to complete the Regional Plan incorporating only those requirements of the Alaska Lands Act that were compatible with the revised Regional planning schedule.

Land Allocation. Allocation of lands and resources is a Forest planning function. Refer to discussion of Forest planning in Chapter I of the Regional Plan.

Additional Wilderness Classification. No policies have been considered in the Regional Plan concerning additional wilderness. The Alaska Lands Act directs that only the Nellie Juan-College Fiord Wilderness Study Area and designated further planning areas on the Chugach National Forest be considered for additional wilderness within this "planning cycle". The Chugach National Forest includes approximately 2 million acres in Wilderness Study and 2.8 million acres in further planning. Wilderness acreage alternatives presented to the public through the upcoming Chugach Land Management Plan may present more or less acreage for consideration.

RPA Targets. Forest Service planning regulations permit proposal of adjustments to RPA targets in the Regional planning process. Insufficient data were available to permit proposing adjustments to the Region's RPA targets for the first round of Regional planning in Alaska.

Detailed Process Guidance. The Forest Service considered developing detailed procedural guidance to the Forests for several resource elements. These alternatives were eliminated for two reasons: (1) a Forest Service Directives system already exists that provides for procedural guidance, and (2) procedural guidance often requires frequent revision and updating as experience is achieved and new information obtained. Placing such details in the Regional Plan would make revision needlessly cumbersome.

Forest Service Manual direction is referenced or incorporated into the Regional Plan only in those instances where best professional judgment led to the conclusion that the direction would most likely be appropriate for the planning period.

beyond the purview of the Regional Forester. For example, reduction of the 4.5 billion board feet per decade timber harvest for the Tongass National Forest was not considered as an alternative to resolve the issues relating to timber management, including the harvest of old growth timber. This harvest level was mandated by Congress in the Alaska Lands Act. Congress has established a series of studies to evaluate effects of this level of timber harvest in the Alaska Lands Act. This harvest level will be reviewed during updates of the Tongass Land Management Plan.

B. Alternatives Considered in Detail

Introduction

Ten sets of alternative standards and guidelines (policies) are displayed. For each policy as many alternatives were developed as necessary to analyze the policy. In each case, Alternative A is the existing direction in the Southeast Alaska Area Guide. In some instances --however-- only one alternative is proposed where, in the professional judgment of the Forest Service, there were no other alternatives at this time for the Region.

The preferred alternative for each policy is printed in upper case letters. Refer to Chapter IV, Environmental Consequences, for discussion of the difference between alternatives.

MAJOR REGIONAL PLAN POLICY ALTERNATIVES

1. APPROPRIATE SYSTEMS OF SILVICULTURE

ERNATIVE A (Area Guide)	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D (Preferred)
tting and other cuts d to regenerate an evenaged f timber will be used as a method only where: or clearcutting, it is ned to be the optimum and er such cuts, it is ned to be appropriate to the objectives and ments of the relevant land ent plan. he interdisciplinary review n completed and the potential mental, biological, aesthetic, ring and economic impacts on le to be advertised have been d. utting blocks, patches, or are shaped and blended to the practicable with the natural . learcuts are carried out in a consistent with the protection , watershed, fish, wildlife, ion, and aesthetic resources, regeneration of the timber e. stands designated for utting have generally reached imination of mean annual ent of growth. cutting units are located er stands can be logged creating inoperable areas ating areas where future will destroy needed ration established after r removal. Unit spacing osequent entries will e on the basis of total lanning by compartment.	Even-aged management is the prescribed silvicultural system for all species.	Uneven-aged management is the prescribed silvicultural system for all species.	EVEN-AGED MANAGEMENT IS THE PRESCRIBED SILVICULTURAL SYSTEM FOR ALL SPECIES, EXCEPT WHERE UNEVEN-AGED MANAGEMENT IS NEEDED TO MEET OTHER RESOURCE OBJECTIVES. CLEARCUTTING TO REGENERATE AN EVEN-AGED STAND WILL BE USED AS A CUTTING METHOD ONLY WHERE SUCH PRACTICES ARE DETERMINED TO BE OPTIMUM TO MEET THE OBJECTIVES AND REQUIREMENTS OF THE FOREST LAND MANAGEMENT PLAN, AND CAN BE CARRIED OUT IN A MANNER CONSISTENT WITH THE INTERDISCIPLINARY PROCESS FOR THE PROTECTION OF SOIL, WATERSHED, FISH AND WILDLIFE, RECREATION, AESTHETIC RESOURCES, AND MAINTAIN THE TIMBER RESOURCE IN A PRODUCTIVE STATE. MANAGEMENT PRESCRIPTIONS WILL NOT BE CHOSEN PRIMARILY BECAUSE THEY WILL YIELD THE GREATEST DOLLAR RETURN OR THE GREATEST OUTPUT OF TIMBER, ALTHOUGH THESE FACTORS WILL BE CONSIDERED. CLEARCUTTING AND OTHER CUTS DESIGNED TO REGENERATE AN EVEN-AGED STAND OF TIMBER WILL BE USED AS A CUTTING METHOD ONLY WHERE CUTTING UNITS ARE LOCATED SO TIMBER STANDS CAN BE LOGGED WITHOUT CREATING ISLANDS OF TIMBER THAT CANNOT BE ECONOMICALLY HARVESTED IN THE FUTURE OR CREATING AREAS WHERE FUTURE LOGGING WILL DESTROY REGENERATION ESTABLISHED FOLLOWING AN EARLIER REGENERATION CUTTING. (Regeneration cutting methods and silvicultural standards for Alaska coastal forest types are discussed in full text of Chapter V of the Regional Plan.)

ALTERNATIVE A (Area Guide)	ALTERNATIVE B	ALTERNATIVE C	ALTERNATIVE D (Preferred)
The most efficient timber harvesting and extraction systems will be utilized, consistent with prescriptions and policies for other resources. Systems will not be selected primarily because they give the greatest dollar return or the greatest unit output of timber. Special attention will be given to logging practices that encourage diversity of wildlife habitat; for example, small clearcuts and other silvicultural techniques may be used to increase browse production in key winter habitat.			

2. MAXIMUM SIZE OF CREATED OPENINGS

ALTERNATIVE A (Area Guide)	ALTERNATIVE B	ALTERNATIVE C (Preferred)	ALTERNATIVE D
Clearcutting and other cuts designed to regenerate an even-aged stand of timber will be used as a cutting method only where: - there is established a maximum size limit of 160 acres to be cut at one place and time. The established limit may be exceeded only after appropriate public notice and review by the responsible Forest Service officer ne level above the Forest Service officer who normally would approve the harvest proposal. Such limits will not apply to the size of areas cut as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm.	NFMA regulations provide that 100 acres is the maximum size limit of created openings to be allowed for the hemlock-Sitka spruce forest type of coastal Alaska unless excepted under specific conditions. although the regulations speak only of the hemlock-Sitka spruce type of coastal Alaska, the more pure stands of both species, the cedar type, the Chugach white spruce and coastal hardwoods type will also be governed by the 100-acre limit. Cedar is usually considered to be a component of the broad hemlock-Sitka spruce ecotype. White spruce responds similarly to the silvicultural methods in use for the hemlock-spruce type since these methods simulate conditions under which stands develop naturally. The established limits do not apply to the size of areas harvested as a result of natural castastrophic conditions, such as fire, insect and disease attack, or windstorm.	NFMA REGULATIONS PROVIDE THAT 100 ACRES IS THE MAXIMUM SIZE LIMIT OF CREATED OPENINGS TO BE ALLOWED FOR THE HEMLOCK-SITKA SPRUCE FOREST TYPE OF COASTAL ALASKA UNLESS EXCEPTED UNDER SPECIFIC CONDITIONS. ALTHOUGH THE REGULATIONS SPEAK ONLY OF THE HEMLOCK-SITKA SPRUCE TYPE OF COASTAL ALASKA, THE MORE PURE STANDS OF BOTH SPECIES, THE CEDAR TYPE, THE CHUGACH WHITE SPRUCE, AND COASTAL HARDWOODS TYPE WILL ALSO BE GOVERNED BY THE 100-ACRE LIMIT. CEDAR IS USUALLY CONSIDERED TO BE A COMPONENT OF THE BROAD HEMLOCK-SITKA SPRUCE ECOTYPE. WHITE SPRUCE RESPONDS SIMILARLY TO THE SILVICULTURAL METHODS IN USE FOR THE HEMLOCK-SPRUCE TYPE SINCE THESE METHODS SIMULATE CONDITIONS UNDER WHICH STANDS DEVELOP NATURALLY. THE ESTABLISHED LIMITS DO NOT APPLY TO THE SIZE OF AREAS HARVESTED AS A RESULT OF NATURAL CASTROPHIC CONDITIONS, SUCH AS FIRE, INSECT AND DISEASE ATTACK, OR WINDSTORM.	Seventy-five acres is the ma size limit of created openin be allowed unless excepted u the same conditions which ap to Alternatives B & C. Appr of the Regional Forester is quired before the size limit may be exceeded.

Recognizing that harvest units must be designed to accomplish management goals, created openings may be larger where larger units will produce a more desirable contribution of benefits.

RECOGNIZING THAT HARVEST UNITS MUST BE DESIGNED TO ACCOMPLISH MANAGEMENT GOALS, CREATED OPENINGS MAY BE LARGER WHERE LARGER UNITS WILL PRODUCE A MORE DESIRABLE CONTRIBUTION OF BENEFITS.

Where is it determined exceptions to the size limitations are warranted based on criteria below, the actual size limit will be 350 acres. Review by the Regional Forester is required.

WHERE IT IS DETERMINED THAT EXCEPTIONS TO THE SIZE LIMITATION IS WARRANTED, THE ACTUAL SIZE WILL BE DETERMINED THROUGH AN INTERDISCIPLINARY PROCESS. FOLLOWING A 60-DAY PUBLIC REVIEW PERIOD, APPROVAL OF THE REGIONAL FORESTER IS REQUIRED.

Factors to be considered to determine when a larger size may be permitted are:

FACTORS TO BE CONSIDERED TO DETERMINE WHEN A LARGER SIZE MAY BE PERMITTED ARE:

a. Topography

A. TOPOGRAPHY

b. Relationship of Units to Other Natural or Artifical Openings and Proximity of Units

B. RELATIONSHIP OF UNITS TO OTHER NATURAL OR ARTIFICAL OPENINGS AND PROXIMITY OF UNITS

c. Coordination and Consistency with Adjacent Management Areas

C. COORDINATION AND CONSISTENCY WITH ADJACENT MANAGEMENT AREAS

d. Effect on Water Quality and Quantity

D. EFFECT ON WATER QUALITY AND QUANTITY

e. Visual Absorbtion Capability

E. VISUAL ABSORBTION CAPABILITY

f. Effect on Wildlife and Fish Habitat

F. EFFECT ON WILDLIFE AND FISH HABITAT

g. Regeneration Requirements for Desirable Tree Species Based Upon Latest Research

G. REGENERATION REQUIREMENTS FOR DESIRABLE TREE SPECIES BASED UPON LATEST RESEARCH

h. Transportation and Harvesting System Requirements

H. TRANSPORTATION AND HARVESTING SYSTEM REQUIREMENTS

i. Natural and Biological Hazards to Survival of Residual Trees and Surrounding Stands

I. NATURAL AND BIOLOGICAL HAZARDS TO SURVIVAL OF RESIDUAL TREES AND SURROUNDING STANDS

j. Relative Total Costs of Preparation, Logging, and Administration of Harvest Cuts

J. RELATIVE TOTAL COSTS OF PREPARATION, LOGGING, AND ADMINISTRATION OF HARVEST CUTS

Forest Supervisors will identify the particular conditions under which the larger size is

FOREST SUPERVISORS WILL IDENTIFY THE PARTICULAR CONDITIONS UNDER WHICH A LARGER SIZE IS

3. DISPERSAL AND SIZE VARIATION OF TREE OPENINGS CREATED BY EVEN-AGED MANAGEMENT

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
Clearcutting and other cuts designed to regenerate an even-aged stand of timber will be used as a cutting method only where: cutting blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain. cutting units are located so timber stands can be logged without creating inoperable areas or creating areas where future logging will destroy needed regeneration established after earlier removal. Unit spacing and subsequent entries will be done on the basis of total area planning by compartment.	WHEN OPENINGS ARE CREATED IN THE FOREST BY THE APPLICATION OF EVEN-AGED SILVICULTURE, THE OPENINGS WILL BE SHAPED AND BLENDED WITH THE NATURAL TERRAIN IN ORDER TO ACHIEVE VISUAL AND WILDLIFE HABITAT OBJECTIVES TO THE EXTENT PRACTICABLE. OPENINGS WILL BE LOCATED TO ACHIEVE THE DESIRED COMBINATION OF MULTIPLE OBJECTIVES. DISTRIBUTION OF OPENINGS OVER TIME WILL CONFORM TO A TOTAL COMPARTMENT MULTI-ENTRY LAYOUT PLAN AND BE SCHEDULED TAKING INTO CONSIDERATION THE ASSUMPTIONS USED IN THE ANALYTICAL ALLOCATION MODEL. THE MULTI-ENTRY LAYOUT PLAN MUST CONSIDER ALL THE NATIONAL FOREST LAND INVOLVED. ASSUMPTIONS USED FOR PLAN AMENDMENTS OR REVISIONS SHOULD REVIEW ACTIVITIES ALREADY SCHEDULED.	
Sale layouts will include provisions for the protection and enhancement of fish and wildlife resources and habitat as described elsewhere in the Guide.	STEPS A THROUGH G WILL BE FOLLOWED: A. IDENTIFY AND DELINEATE NON-FOREST AND NON-COMMERCIAL FOREST.	
Sale layouts where feasible, will include a portion of marginal or low-volume timber stands.	B. IDENTIFY AND DELINEATE NATURAL UNREGULATED AREAS SUCH AS V-NOTCHES, MUSKEGS, AND SENSITIVE SOILS. C. IDENTIFY AND DELINEATE UN-REGULATED AREAS BASED ON MANAGEMENT CONSIDERATIONS SUCH AS MUNICIPAL WATERSHEDS, ADMINISTRATIVE SITES, REC-REATION AREAS, OFFSHORE ISLANDS LESS THAN 50 ACRES AND OTHER CONSIDERATIONS. D. IDENTIFY AND DELINEATE AREAS REQUIRED TO MEET SENSITIVE WILDLIFE HABITAT NEEDS SUCH AS EAGLE TREES, DEER AND GOAT WINTER RANGES, STREAM PROTECTION, RESTING AREAS, AND FEEDING AREAS. E. IDENTIFY AND DELINEATE AREAS OF EXTENDED ROTATIONS TO MEET WILD-	

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
	F. HARVEST SCHEDULING WILL LANDS THAT WILL BE RETAINED THE NEEDS OF OTHER RESOURCES THE CONDITION TO BE RETAINED SPECIFIC.	
	G. SELECTION OF HARVEST UNI EACH ENTRY WILL CONSIDER THE	
	(1) TOPOGRAPHY	
	DISPERSION OF OPENINGS WILL CONSIDER TOPOGRAPHY AS IT INFLUENCES TECHNOLOGICAL ABILITY TO HARVEST TIMBER; LAYOUT LOCATIONS TO AVOID BLOWDOWN; NATURAL DRAINAGE PATTERNS; AND PROVISIONS FOR FLEXIBILITY NEEDED IN LANDSCAPE DESIGN.	
	(2) RELATIONSHIP TO OTHER OPENINGS	
	AREAS ADJACENT OR CLOSE TO CREATED OPENINGS SHOULD NOT BE SCHEDULED FOR ENTRY UNTIL OPENINGS FROM AN EARLIER HARVEST ARE NO LONGER CONSIDERED OPENINGS OR OTHERWISE MEET MANAGEMENT PRESCRIPTION OBJECTIVES. UNCUT BLOCKS OF REGULATED COMMERCIAL FOREST LAND MUST BE RETAINED IN SIZES AND SHAPES THAT WILL CONSTITUTE LOGICAL LOGGING UNITS.	
	(3) VISUAL QUALITY	
	RESHAPING OR JOINING OF EXISTING OPENINGS MAY BE NECESSARY TO ACCOMPLISH A VARIETY OF VISUAL QUALITY AND OTHER RESOURCE OBJECTIVES.	
	(4) WILDLIFE AND FISHERIES HABITAT	
	WILDLIFE AND FISHERIES NEEDS OVER TIME MUST BE CONSIDERED IN ORDER TO MAINTAIN THE HABITAT POTENTIAL NEEDED TO INSURE DESIRED POPULATION LEVELS.	
	(5) TRANSPORTATION SYSTEM	
	HARVEST UNITS WILL BE DISPERSED TO MAXIMIZE THE EFFECTIVENESS OF THE PROPOSED TRANSPORTATION SYSTEM IN MEETING OVERALL MANAGEMENT PRE-	

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
	SALE LAYOUT MUST INCLUDE A PORTION OF MARGINAL OR LOW-VOLUME TIMBER STANDS, IF THEY ARE INCLUDED WITHIN THE BOUNDARIES OF THE SALE AREA WHERE SUCH STANDS EXIST (YIELD CALCUTATIONS IN TLMP ARE BASED ON HARVESTING 10 PERCENT OF THE MARGINAL STAND COMPONENT IN ADDITION TO A PROPORTION OF TECHNOLOGICALLY MARGINAL STANDS PROVIDED FOR BY THE SPECIAL INVESTMENT DETERMINATIONS.)	

4. STATE OF VEGETATION THAT WILL BE REACHED BEFORE A CUTOVER IS NO LONGER CONSIDERED AN OPENING

ALTERNATIVE A (Area Guide)	ALTERNATIVE B	ALTERNATIVE C (Preferred)
No Area Guide Policy	Openings created in the Forest by the application of even-aged silviculture are no longer considered an opening when the regenerated vegetation meets one of the following criteria established as the primary consideration: a) Appearance Where visual quality is the primary consideration, regenerated vegetation must be of sufficient height and density to mask stumps and other logging debris before a cut is no longer considered an opening. The new stand must also be of sufficient size to provide gradation of contrast between adjacent uncut stands and newly planned harvest units. Crown closure should be at least 60 percent for stands with no pre-commercial thinning. (Crown closure will not be a criteria for stands with pre-commercial thinning prescriptions.) Spacing and height of the dominant vegetation will vary according to steepness of slope and distance from view.	MIMIMUM STOCKING LEVELS WILL BE BASED ON SPACING, DISTRIBUTION, AND STAND MANAGEMENT OBJECTIVES RATHER THAN THE NUMBER OF TREES PER ACRE IN ACCORDANCE WITH REGENERATION STOCKING GUIDES CONTAINED IN FOREST SERVICE HANDBOOK 2409.26d, REGION 10, SILVICULTURAL EXAMINATION AND PRESCRIPTION HANDBOOK. CREATED OPENINGS WILL BE ADEQUATELY STOCKED WITH DESIRABLE SPECIES, WHICH ARE APPROXIMATELY FIVE FEET IN HEIGHT ON NATIONAL FORESTS IN COASTAL ALASKA, BEFORE THE AREA WILL NO LONGER BE CONSIDERED AN OPENING FOR THE PURPOSES OF LIMITATIONS ON SCHEDULING, LOCATIONS, AND SIZE OF ADDITIONAL CREATED OPENINGS ON NATIONAL FOREST LANDS. THE BASIS FOR THIS DETERMINATION IS THE THIRD YEAR SILVICULTURAL SURVEY.

ALTERNATIVE A (Area Guide)	ALTERNATIVE B
	b. Wildlife h Where cover, t food, and othe features are d considerations, longer considered dominant vegetati over 75 percent o a height of appro
	c. Silviculture Minimum stocking on spacing, distr management object number of trees p with regeneration contained in Fore 2409.26d, Region l Examination and Prescriptio
	The following guidelines will be considered as minimum requirements to achieve silvicultural goals.
	The state of vegetation in a created opening will contain merchantable tree species, a majority of which will have reached five feet in height and stocking of at least 300 well distributed trees per acre on National Forests in coastal Alaska before the area will no longer be considered an opening for the purposes of limitations on scheduling, locations, and size of additional created openings on National Forest land.

5. MANAGEMENT INTENSITY

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
Artificial reforestation and timber stand improvement projects having benefits to other resources shall receive priority over those benefiting only one resource. Examples would be precommercial thinning in winter deer range and reforestation of areas having scenic value. Seeding or planting shall be used to reforest areas on which natural regeneration has not occurred within four years or where accelerated regeneration is desired. Genetically improved seed or trees will be used as they become available. Forest fertilization shall be tested, utilizing research or administrative studies of the soils and the climatic and topographic conditions of the site, prior to being used on an operational basis.	IMPLEMENT NEW TECHNOLOGIES LEADING TO THE INCREASED UTILIZATION OF WOOD PRODUCTS ON THE ALASKA NATIONAL FORESTS. ACHIEVE OPPORTUNITIES TO INCREASE TIMBER YIELDS ON NATIONAL FOREST LANDS IN ALASKA. CONTINUE MANAGEMENT PRACTICES SUCH AS PLANTING, RELEASE, AND WEEDING AS NEEDED, AND INSECT AND DISEASE CONTROL. MAINTAIN THE TIMBER SUPPLY FROM THE TONGASS NATIONAL FOREST TO DEPENDENT INDUSTRY AT A RATE OF FOUR BILLION FIVE HUNDRED MILLION BOARD FEET PER DECADE. ACHIEVE RPA TARGETS ON THE TONGASS NATIONAL FOREST WITH INVESTMENTS IN ADVANCED ROADING, PRECOMMERCIAL THINNING, AND ADVANCED LOGGING SYSTEM LAYOUT AND DEVELOPMENT. MAINTAIN AND ENHANCE PRODUCTIVITY OF SUITABLE FORESTED LAND (ALL OWNERSHIPS) TO MINIMIZE INFLATIONARY IMPACTS OF WOOD PRODUCT PRICES ON DOMESTIC ECONOMY AND CONTRIBUTE TOWARD A NET NATIONAL EXPORT OF FOREST PRODUCTS BY THE YEAR 2030. ACHIEVE AND MAINTAIN, WHERE POSSIBLE THE PRODUCTIVITY OF COMMERCIAL TIMBER LANDS AT 90 PERCENT OF THEIR POTENTIAL LEVEL OF GROWTH, CONSISTENT WITH THE PROVISIONS OF NFMA. SEEDING OR PLANTING SHALL BE USED TO REFOREST AREAS ON WHICH NATURAL REGENERATION HAS NOT OCCURRED OR WHERE ACCELERATED REGENERATION IS DESIRED. GENETICALLY IMPROVED SEED TREES WILL BE USED AS THEY BECOME AVAILABLE. EXAMINE ALL NATIONAL FOREST LANDS TREATED AFTER THE FIRST AND THIRD GROWING SEASONS. THIS REQUIREMENT WILL BE HANDLED IN THE FOLLOWING WAY: A. EXAMINE ARTIFICIAL SEEDING OR PLANTING TREATMENTS ONE AND THREE YEARS AFTER	

B. CONDUCT TIMBER STAND IMPROVEMENT PROJECT SURVEYS, AS PART OF PROJECT INSPECTION OR WITHIN ONE YEAR OF COMPLETION. FOR MOST PROJECTS, NO THIRD YEAR EXAMINATION WILL BE COMPLETED.

C. NO FIRST YEAR SURVEYS ARE REQUIRED IF THE SILVICULTURAL PRESCRIPTION ANTICIPATES NATURAL REGENERATION.

D. STANDS WILL BE CERTIFIED AS STOCKED IF THE THIRD YEAR SURVEY INDICATES THAT THE AREA MEETS STOCKING STANDARDS.

E. SCHEDULE ANOTHER SURVEY NOT LATER THAN SEVEN GROWING SEASONS AFTER HARVEST IF THE THIRD YEAR SURVEY INDICATES THE AREA IS VERY LIKELY TO BE STOCKED BUT MORE TIME IS REQUIRED TO MAKE THIS DETERMINATION.

F. PRESCRIBE ARTIFICIAL REGENERATION IF THE THIRD YEAR SURVEY INDICATES THAT NATURAL REGENERATION IS HIGHLY UNLIKELY.

SCHEDULE ARTIFICIAL REFORESTATION AND TIMBER STAND IMPROVEMENT PROJECTS HAVING BENEFITS TO OTHER RESOURCES, BEFORE THOSE BENEFITING ONLY ONE RESOURCE. EXAMPLES WOULD BE PRECOMMERCIAL THINNING IN WINTER DEER RANGE AND REFORESTATION OF AREAS HAVING SCENIC VALUE.

FOREST FERTILIZATION MAY BE USED ON SOILS DETERMINED TO HAVE INSUFFICIENT NUTRIENT STATUS TO ALLOW THE SUCCESSFUL ESTABLISHMENT OF A CONIFER COVER WITHIN THE TIME CONSTRAINTS IMPOSED.

MANAGEMENT INTENSITY ALSO INCLUDES THE SELECTION, SCHEDULING AND IMPLEMENTATION OF THE FOLLOWING ADDITIONAL SILVICULTURAL PRACTICES:

A. COMMERCIAL THINNING
B. SALVAGE CUTTING
C. PRESCRIBED BURNING
D. PRECOMMERCIAL THINNING
E. FERTILIZATION
F. RELEASE OF CONIFERS FROM OVER-TOPPING VEGETATION
G. SITE PREPARATION FOR PLANTING

6. UTILIZATION STANDARDS

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
Require utilization and optimum practical use of wood material, both in the woods and at the mill. Promote the use of wood for its highest value product commensurate with present and anticipated supply and demand. Improvements in utilization will be made through sale preparation, appraisals, contract administration and dissemination of research information. Sale and utilization of dead, blown-down, and other deteriorating timber will receive high priority.	REQUIRE UTILIZATION AND OPTIMUM PRACTICAL USE OF WOOD MATERIAL. PROMOTE THE USE OF WOOD FOR ITS HIGHEST VALUE PRODUCT COMMENSURATE WITH EXISTING MARKETS. IMPROVEMENTS IN UTILIZATION WILL BE MADE THROUGH SALE PREPARATION, APPRAISALS, CONTRACT ADMINISTRATION AND DISSEMINATION OF RESEARCH INFORMATION. SALE AND UTILIZATION OF DEAD, BLOWN-DOWN, AND OTHER DETERIORATING TIMBER WILL RECEIVE HIGH PRIORITY. NATIONAL FORESTS WILL CONTINUE TO GROW AND MANAGE STANDS OF TIMBER FOR SAWTIMBER SIZE AND QUALITY TREES EXCEPT FROM FOREST TYPES AND SITES ON WHICH IT IS NOT PRACTICABLE TO PRODUCE CONTINUOUS CROPS OF SAWTIMBER SIZE OR QUALITY. UTILIZATION STANDARDS ARE FOR HARVEST SCHEDULING PURPOSES. ACTUAL SALE CONTRACTS WILL CONTINUE TO EMPHASIZE MAXIMUM FEASIBLE UTILIZATION STANDARDS. MINIMUM SAWLOG MERCHANTABILITY STANDARDS FOR THE TONGASS AND CHUGACH NATIONAL FORESTS ARE DISPLAYED BELOW ALL FORESTS A. FOR STANDS CLASSIFIED AS "REGENERATED" IN TIMBER HARVEST SCHEDULES, UTILIZATION STANDARDS WILL BE AS FOLLOWS: SPECIES/PRODUCT - ALL SAWLOGS MINIMUM DBH - 7 INCHES MINIMUM TOP DIAMETER (DIB) - 5 INCHES % SOUND VOLUME - 25% THE VOLUME OF ENDEMIC MORTALITY CULL OR UTILITY LOGS WILL NOT BE INCLUDED IN ALLOWABLE SALE QUANTITY CALCULATIONS BECAUSE THEY WERE NOT INVENTORIED OR INCLUDED IN THE YIELD CALCULATIONS.	Same as Alternative B except that utility volumes are included in the allowable sale quantity calculations.

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
	B. THE MINIMUM UTILIZATION STANDARDS TO BE USED FOR DETERMINING THE HARVEST SCHEDULES 1/ FOR EXISTING OLD GROWTH STANDS ARE: TONGASS FOREST SPECIES/PRODUCT - ALL SAWLOGS MINIMUM DBH - 9 INCHES MINIMUM LOG LENGTH - 12 FEET MINIMUM TOP DIAMETER (DIB) - 6 INCHES % SOUND VOLUME - 33 1/3% CHUGACH FOREST SPECIES/PRODUCT - ALL SAWLOGS MINIMUM DBH - 9 INCHES MINIMUM LOG LENGTH - 8 FEET MINIMUM TOP DIAMETER (DIB) - 6 INCHES % SOUND VOLUME - 33 1/3% 1/ In determination of harvest levels, slight variations are allowed to conform to existing inventories and yield tables. MINIMUM UTILIZATION STANDARDS WILL BE REVIEWED PERIODICALLY TO REPRESENT CURRENT UTILIZATION TRENDS, MARKET CONDITIONS AND STATE-OF-THE-ART TECHNOLOGY.	
Timber will usually be cut on the following schedule of priorities: deteriorating stands, incompletely stocked stands, and large stands being managed for age class diversity. Generally, sites in each category having the highest potential productivity should be cut first.	HARVEST SCHEDULING WILL CONSIDER PRIORITIES FOR: DETERIORATING STANDS IMCOMPLETELY STOCKED STANDS, AND STANDS WHICH HAVE ACHIEVED THEIR PRODUCTIVE POTENTIAL. SCHEDULING WILL ALSO CONSIDER THE GOALS AND OBJECTIVES OF THE FOREST PLAN AND THE MOST EFFICIENT WAY OF ACHIEVING THEM.	Forest Supervisors will consider the yarding of unmerchantable material from sales where there are transportation links to established communities to improve utilization of firewood materials.
The Forest Service will continue the program to salvage beach logs in cooperation with the State of Alaska.	CONTINUE THE PROGRAM TO SALVAGE BEACH LOGS IN COOPERATION WITH THE STATE OF ALASKA.	

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
Where compatible with environmental protection objectives, private enterprise will be encouraged to utilize timber resources. The Forest Service will plan sale offerings to encourage competitive bidding and in a range of sizes and species that provides opportunities for small business enterprises. A fair share of timber will be set aside for small business operators.	PLAN SALE OFFERINGS TO ENCOURAGE COMPETITIVE BIDDING AND IN A RANGE OF SIZES AND SPECIES THAT PROVIDES OPPORTUNITIES FOR SMALL BUSINESS ENTERPRISES. FOREST SUPERVISORS WILL CONSIDER THE YARDING OF UNMERCHANTABLE MATERIAL FROM SALES WHERE THERE ARE TRANSPORTATION LINKS TO ESTABLISHED COMMUNITIES TO IMPROVE UTILIZATION OF FIREWOOD MATERIALS.	

7. BIOLOGICAL GROWTH POTENTIAL FOR DETERMINING CAPABILITY OF LAND FOR TIMBER PRODUCTION

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
No Area Guide Policy	NATIONAL FOREST LANDS ARE CONSIDERED CAPABLE OF TIMBER PRODUCTION WHEN THE BIOLOGICAL GROWTH POTENTIAL EXCEEDS 20 CUBIC FEET PER ACRE PER YEAR PARTIAL STEM VOLUME (STUMP HEIGHT TO DIB). INCLUSIONS OF FOREST LAND OF LESS THAN THE AFOREMENTIONED GROWTH POTENTIAL WILL BE HARVESTED WHEN NECESSARY FOR PREPARATION OF LOGICAL HARVEST UNITS. THIS PRINCIPLE WILL APPLY TO OTHER MINOR INCLUSIONS OF LANDS CLASSIFIED AS UNSUITABLE BECAUSE OF INABILITY TO SEPARATE THEM. THE HARVESTING OF LANDS OF LESS THAN THE AFOREMENTIONED GROWTH POTENTIAL FOR FUELWOOD IS PERMITTED. OCCASIONAL SAWLOG TREES WILL BE SCATTERED IN THESE AREAS. THESE MERCHANTABLE SAWLOGS MAY BE SOLD AS SAWLOGS WHEN THE AREA IS HARVESTED PRIMARILY FOR FUELWOOD. THE MATERIAL HARVESTED FROM LANDS NOT CAPABLE OF GROWING 20 CUBIC FEET ANNUALLY IS NOT INCLUDED IN THE ALLOWABLE SALE QUANTITY.	

8. UNIT OF MEASURE FOR EXPRESSING MEAN ANNUAL INCREMENT

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
Clearcutting and other cuts designed to regenerate an even-aged stand of timber will be used as a cutting method only where: - stands designated for clearcutting have generally reached the culmination of mean annual increment of growth.	THE FINAL HARVEST OF EVEN-AGED STANDS WILL NOT BE SCHEDULED UNTIL THE STAND APPROACHES CULMINATION OF MEAN ANNUAL INCREMENT (CMAI) OF GROWTH. CMAI, IN THE MANAGEMENT OF EVEN-AGED STANDS, WILL BE INDICATED BY THE AVERAGE AGE OF THE STAND BASED ON CUBIC FOOT VOLUME.	

9. TRANSPORTATION AND UTILITY CORRIDORS

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
Transportation corridor allocation and development will be performed in compliance with the policies and criteria established in the other resource accounts. Projects will be planned, located, designed and constructed to recognize other resource values and to minimize anticipated adverse environmental impacts.	TRANSPORTATION AND UTILITY CORRIDOR PLANNING AND DEVELOPMENT WILL BE IN COMPLIANCE WITH THE POLICIES AND CRITERIA ESTABLISHED IN THIS AND OTHER RESOURCE ELEMENTS. TRANSPORTATION FACILITIES CONSTRUCTED BY THE FOREST SERVICE WILL MEET STANDARDS REQUIRED FOR THE USE, MANAGEMENT AND PROTECTION OF THE NATIONAL FOREST, CONSIDERING SAFETY, COSTS OF TRANSPORTATION (INCLUDING OPERATION AND MAINTENANCE), AND IMPACTS ON OTHER RESOURCES.	
Transportation corridor alteration and development will be coordinated with the Canadian, Federal, State and local government agencies having jurisdictional, delegated or assigned responsibilities connected with either corridor development or land management.	TRANSPORTATION AND UTILITY CORRIDOR PLANNING AND DEVELOPMENT WILL BE COORDINATED WITH THE CANADIAN, FEDERAL, STATE AND LOCAL GOVERNMENT AGENCIES AS WELL AS PRIVATE LAND OWNERS. TRANSPORTATION CONNECTIONS BY THE FOREST SERVICE WILL NOT BE MADE BETWEEN COMMUNITIES OR EMERGING COMMUNITIES WITHOUT THE PARTICIPATION AND COLLABORATION OF STATE AND LOCAL GOVERNMENTS, COMMUNITIES AND AFFECTED INDIVIDUALS. THE FOREST SERVICE ACKNOWLEDGES THAT THE STATE OF ALASKA HAS IDENTIFIED SEVERAL NATURAL TRANSPORTATION CORRIDORS IN SOUTHEAST AND SOUTHCENTRAL ALASKA FOR POSSIBLE LAND TRANSPORTATION FACILITIES. THE PRIMARY FUNCTION OF THESE CORRIDORS IS FOR THE TRANSPORTATION OF PEOPLE, GOODS, AND SERVICES BETWEEN COMMUNITIES. BECAUSE THE CORRIDORS PARALLEL THE MAJOR RIVERS AND MARINE ROUTES OF THE AREA, HIGH FISHERIES, WILDLIFE, ESTUARINE, RECREATIONAL, VISUAL AND OTHER VALUES ARE AFFECTED. DATA COLLECTION TO DEFINE THE EXTENT OF CONFLICTS WITH THE CONSTRUCTION AND USAGE OF THESE CORRIDORS IS NEEDED. CONSIDERATION OF THE ALLOCATION OF LANDS ALONG THESE CORRIDORS FOR TRANSPORTATION AND UTILITY PURPOSES IS REQUIRED IN FOREST PLANNING. ALLOCATED TRANSPORTATION CORRIDORS WILL BE INCLUDED IN THE FOREST HIGHWAY SYSTEM AS APPROPRIATE.	

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
The Forest Service as the principal land manager in Southeast Alaska will review all proposals and plans of any Federal, State or local government agency, firm or individual for any development of a new transportation corridor within the Tongass National Forest. Changes to an existing corridor development within the Tongass National Forest shall be contingent upon the approval of the appropriate Forest Service line officer. Approval will require documentation of sufficient public involvement. The Forest Plan will indicate the locations of transportation corridors identified to date. The Forest Service will continue to engage in comprehensive and coordinated transportation planning with other Federal, State and local government agencies to provide a Forest-wide perspective of how individual networks fit into the overall transportation system.	TRANSPORTATION PLANNING WILL BE INTEGRATED WITH PRESENT AND FUTURE LAND MANAGEMENT PLANS TO THE EXTENT FEASIBLE. FOREST PLANS WILL SHOW EXISTING AND ANTICIPATED FOREST ARTERIAL AND MAJOR COLLECTOR CORRIDORS. PLANS WILL IDENTIFY, AS FAR AS POSSIBLE, WHAT MODES OF TRANSPORTATION WILL BE DEVELOPED FOR A GIVEN AREA. WATER TRANSPORTATION MODES AND ANTICIPATED LAND-WATER TRANSFER FACILITIES WILL BE SPECIFIED WHERE LOGGING ACTIVITIES, FERRY TERMINALS, PUBLIC ACCESS, BARGE RAMPS, AND SIMILAR FACILITIES ARE INTENDED. THE LIKELY CORRIDOR LOCATIONS FOR OTHER TRANSPORTATION FACILITIES WILL BE SUB-SEQUENTLY DEVELOPED.	
Approved transportation corridor proposals and plans will be integrated with present and future land management plans at all planning levels to utilize each corridor resource to the greatest extent possible. Transportation planning will be integrated with present and future land management plans at the allocation, prescription and implementation levels of planning. Plans will identify, as far as possible, what transportation modes will be developed for a given area.	APPROVED TRANSPORTATION AND UTILITY CORRIDOR PROPOSALS AND PLANS WILL BE INTEGRATED WITH PRESENT AND FUTURE LAND MANAGEMENT PLANS AT ALL PLANNING LEVELS TO UTILIZE EACH CORRIDOR RESOURCE TO THE GREATEST EXTENT POSSIBLE. CORRIDORS FOR FUTURE UTILITIES WILL FOLLOW LAND TRANSPORTATION ROUTES TO THE EXTENT PRACTICABLE AND APPROPRIATE. ELECTRIC TRANSMISSION FACILITIES CONSTRUCTED AND MAINTAINED WITHOUT ROAD ACCESS NEED NOT FOLLOW ROAD CORRIDORS.	

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
	EXISTING TRANSPORTATION CORRIDORS ARE RECOGNIZED AS THE COMBINATION OF LAND, WATER, AND AIR TRANSPORTATION MODES WHICH PROVIDE TRANSPORTATION ACCESS BETWEEN COMMUNITIES AND OTHER DEVELOPED USE AREAS IN ALASKA. EXISTING UTILITY CORRIDORS ARE THOSE LAND AND WATER BASED ROUTES OVER WHICH PIPELINES, ELECTRICAL TRANSMISSION LINES, OR COMMUNICATION LINES TRAVERSE WHERE UTILITIES ARE BEING PROVIDED FROM THE SOURCE TO A COMMUNITY OR MAJOR USER OR BETWEEN COMMUNITIES.	

10. AIR QUALITY

ALTERNATIVE A (Area Guide)	ALTERNATIVE B (Preferred)	ALTERNATIVE C
No Area Guide Policy	THE ONLY FOREST SERVICE ACTIVITY WHICH HAS A SIGNIFICANT IMPACT ON AIR QUALITY IS PRESCRIBED BURNING. SMOKE MANAGEMENT WILL BE COORDINATED WITH THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION TO ASSURE THAT AIR QUALITY IS NOT DEGRADED. LOCAL SOURCES OF EMISSIONS WILL BE EVALUATED TO ASSURE THAT AIRSHED INTEGRITY IS MAINTAINED.	

Introduction

The purpose of Chapter III is to describe the most important aspects of the Region's environment.

The following descriptions emphasize those characteristics of the physical, biological, social, and economic settings that are most important with respe to the issues addressed in Chapter I of the Environmental Impact Statement. These descriptions are particularly relevant to the Tongass and Chugach National Forests.

For this plan, the Alaska Region is divided into three sub-regions:

Southeast - the entire Alaska panhandle, from Dixon Entrance to Icy Cape, which includes all of the Tongass National Forest (16,954,713 acres).

Southcentral - that area which begins at Icy Cape, and extends into the Anchorage borough along the southwestern coast and out the Aleutian Chain. The Chugach National Forest (5,940,040 acres) lies within this area.

Interior - the remainder of the State.

Physiography

Alaska's major physiographic divisions are the Pacific Mountain System, the Central Highland Basin, and the Arctic Lowland.

All National Forest lands in Alaska lie within the Pacific Mountain physiographic region, a continuation of the coastal mountain system of west Canada and the United States. The Pacific Mountain System consists of two parallel arcs. The larger, northern arc includes the Coastal Mountains between Southeast Alaska and Canada, the Alaska Range, the Aleutian Range, the Aleutian Islands. The southern arc consists of the island mountains of Southeast Alaska, the Fairweather Range, the St. Elias Mountains, and the Chugach-Kenai Mountains. Between the two arcs is a trough containing the canals and straits of Southeast Alaska (the "Inside Passage"), the Copper River lowlands, the Cook Inlet-Susitna lowlands, and Shelikof Strait. The Chugach National Forest lies between the Chugach Mountains and the Gulf of Alaska. The Tongass National Forest comprises the lands between the Coast Range and the Pacific Ocean, and the mountainous islands of the Alexander Archipelago.

The landscape of the Region has been shaped largely by glaciation, resulti in landforms with an abundance of very steep slopes and U-shaped valleys. Unconsolidated soil materials include glacial till, volcanic sediments, alluvium, colluvium, residium, and organic matter. Fine-textured marine a lake deposits occur on valley bottoms and lower hillsides.

Plant Systems

Vegetative types are determined by climatic and edaphic factors. Common vegetative types are: spruce-hemlock, spruce-birch, black spruce, muskeg, alder thickets, cottonsedge and watersedge tundra, Aleutian meadow, and Aleutian and barren heath.

Alaska's vegetative types are related to seven major ecological regions. These regions are identified as Arctic tundra, Brooks Range, Bering tundr Yukon parkland, Alaska-Aleutian Range, Coastal trough, and Pacific forest

Climate

Alaska is separated into three major climatic zones. The Seward Peninsu the area north of the Brooks Range are known as the Arctic Zone. North Anchorage the Copper River Basin, Chugach Mountains, Bristol Bay, and co regions of western Alaska are collectively called the Interior Zone. Th southeast panhandle, south coast, and southwestern islands fall into the Maritime Zone.

about 20 percent of the total precipitation at low elevations. At higher elevations and on the icefields, snow predominates. Annual precipitation ranges from 100 to more than 300 inches. Continental weather dominates Interior Alaska. Compared to Southeast and Southcentral Alaska, temperatures are slightly warmer in summer and much cooler in winter. Precipitation is also much lower, with about 50 percent occurring as rain. Annual precipitation ranges from less than 10 to more than 80 inches in the Interior.

Water

Surface water is abundant throughout Southeast and Southcentral Alaska as a result of high, evenly distributed annual precipitation. Runoff is high, averaging about 95 inches. Natural water storage, including groundwater, is very low due to steep topography, impermeable geographic materials, and small drainage areas. Surface water quality is generally high, except in glacial streams. Abundant, high-quality water provides anadromous fish spawning and rearing streams. Electric power generation, industry, and domestic facilities all use large amounts of water.

Minerals

A wide variety of mineral deposits occur throughout Alaska. Minerals range from the precious metals (gold, silver, and platinum) to base metals (copper, iron, lead, zinc, nickel, cobalt, molybdenum, barium, and chromium). The non-metallics gypsum and asbestos also occur. Coal, oil, and gas deposits exist. Vast quantities of limestone and marble occur in Southeast Alaska.

Exploration for minerals is expected to increase following passage (in 1980) of the Alaska Lands Act. With the exception of Misty Fiords and Admiralty Island National Monuments, the Forests are open to prospecting and entry under the Mining and Leasing Laws. However, those areas designated as Wilderness will be open only to January 1, 1984.

Soils

Mineral and organic soils are present in the Region. Organic soils occupy poorly drained areas where layers of vegetation (mainly sedges and mosses) have been preserved. Land areas with organic soils are termed peat bogs and are classified as wetlands. Most mineral soils with good drainage are highly productive, for coniferous forests and associated vegetation. Organic soils generally do not support forests, but produce mosses, sedges, and woody shrubs.

Transportation

Access in Southeast and Southcentral Alaska is accomplished by land, water, and air modes. A number of communities in this region have no land transportation connections to other communities. A number of natural

rridors along the major rivers and other major waterways have been
entified as transportation resources. Most transportation corridors pass
rough areas with high wildlife, fisheries, visual, and estuarine values.

nd Ownership and Status

nd ownership is perhaps the most controversial issue facing Alaska today.
veral recent issues -- statehood, Native claims, and resource preservation
rsus development -- have aroused uncertainty and serious conflict.

nd, in the management of Forests, includes ownership, adjustments, partial
terest grants, acquisitions, and occupancy. The pattern of land ownership
the National Forests of Alaska is changing from single ownership (the
rest Service) to a pattern of mixed ownership (State, private, cities, and
rest Service). The Alaska Native Claims Act, the Statehood Act, and most
cently, the Alaska Lands Act, have been responsible for the new pattern of
xed ownership.

aska has 365 million acres of land; ninety-nine percent of this land was
ned by the Federal Government only 20 years ago. Passage of the Alaska
atehood Act in 1958 entitled the State to 103.3 million acres of Federal
nd for general purposes. Additional land has been made available to the
ate for special purposes, such as mental health, university, and community
nds. To date, the State has selected 72 million acres for settlement,
ansportation corridors, and potential natural resource development. Twenty
llion acres are patented, and another 15 million acres are tentatively
proved. The State still has 30 million acres of land to select, and at
esent Alaska's Department of Natural Resources is identifying lands of
terest.

e Alaska Native Claims Settlement Act (ANCSA) of 1971 granted the Native
oples of Alaska, including Aleut, Eskimo, Athabaskan, Tlingit, and Haida
oups the right to select 44 million acres of Alaskan land. Village
rporations were established to select and manage village settlement lands.
elve regional corporations were created to manage Native regional resource
nds and subsurface resources of village lands. A thirteenth corporation
thorized by the Act is not eligible to receive land. Currently, Native
rporations have interim conveyance rights to about 5 million acres. One
ason for the delay in conveyance of land both to the State and Native
rporations is the time-consuming process of resolving surveys, easements,
d litigation. The Alaska Statehood Act and the Native Claims Settlement Act
ve entitled Native corporations and the State to selections of National
rest lands. Within Alaska, as much as 400,000 acres of National Forest
nds may be selected by the State, subject to Forest Service approval, for
mmunity expansion, recreation, and development.

location of lands through the Alaska Native Claims Settlement Act, Statehood
, and Alaska Lands Act has brought about a dramatic change in land
nership in the Region. Agreements, easements, and permits for various

management boundaries. Numerous land exchanges to obtain more manageab boundaries are anticipated. Common transportation systems, access to F land, and boundary line maintenance and location will require cooperati management between the private, State and city land owners and the Fore Service.

Cultural Resources

To date approximately 1500 cultural resource sites or objects (historic prehistoric sites or objects) have been inventoried in the Alaska Regio These are a non-renewable national heritage, to be protected and manage the benefit and education of the public. The Region's cultural resourc nearly 10,000 years of history and prehistory, shedding light on the ea known inhabitants of the Chilkat Peninsula and Baranof and Prince of Wa Islands, on the historic era Eskimos and Indians encountered by the Rus and later European and American explorers, traders, and colonists, and Euro-American settlers themselves. The variety of cultural resources p is great, illustrating both Native adaptations (villages, camps, fish w and traps, petroglyphs) and European and American economic, social, and political activities (military installations, trading posts, canneries, sawmills and other industrial remains, fur farms, homesteads, and mines

Presently there are eight National Forest properties listed on the Nati Register of Historic Places, the Federal roster of cultural resources significant on the national and local level. Additional sites have bee determined eligible for listing by the Keeper of the National Register. of the properties listed on the National Register of Historic Places ha been entered on the National Register of Historic Landmarks, a roster o considered to be of great significance to the history and cultural heri the Nation. These properties are designated National Historic Landmark

I. Sites on the National Register of Historic Places:

A. Chugach National Forest

1. Palugvik Site (NHL)
2. Chilkat Oil Refinery
3. Hirshey Mine
4. Alaska Railroad Tunnel No. 1
5. Bering Expedition Landing Site (NHL)

B. Tongass National Forest

1. Storehouse No. 3 (Ketchikan)
2. Fort Durham (in part Chatham) (NHL)
3. Skagway Historic District and White Pass (in part Chatham)

II. Sites Determined Eligible by Keeper of National Register:

A. Crab Bay Petroglyph (Chatham)

The recreation and visual resource of the Alaska Region comprise a remarkable array of physical and biological attractions. These attractions include wildlands, tidewater glaciers, protected inland waterways and lakes, free flowing rivers, rugged coastlines, hundreds of islands, true fiords, unusual fish and wildlife populations, varied flora, and other features which are not found elsewhere in the United States.

Recreation settings range across a wide spectrum from primitive to urban. Many of the settings which are now primitive to semiprimitive in character will remain so. Of the 23,298,000 acres now contained in the Tongass and Chugach National Forests, 23 percent or 5,362,000 acres all on the Tongass have been added to the National Wilderness Preservation System by the recently passed Alaska Lands Act. Nine percent, or 2,222,000 acres have been identified for wilderness study (on the Chugach) under the same act. In addition, 12 percent, or 2,746,000 acres (on the Tongass) are being managed under Land Use Designation II, which limits road building and development activities. Numerous other lands such as noncommercial forest, and alpine areas, which lie within areas scheduled for development will, in the long-term, also remain primitive or semiprimitive in character. The remaining widely distributed primitive and semiprimitive lands which comprise roughly one-third of the Forests will gradually be modified by development activities to satisfy other multiple-use goals.

There are numerous parcels of private land in coastal Alaska, lands patented for salmon canneries, salteries, homesites, homesteads, fox farms, or for other activities abandoned many years ago. Such private lands were selected for their proximity to good fishing areas, water supplies, or good anchorages. These lands are prime development sites. In addition, thousands of acres of land in outlying areas have been selected by Native corporations and the State of Alaska. Much of this area is expected to be developed over the long-term and the character of the coastal area will gradually change from its present semiprimitive setting to one of a more rural although sparsely populated setting.

Fish

In Southeast Alaska, about 120,000 acres of lakes and 23,000 miles of
support fish. On the Chugach Forest about 70,000 acres of lakes and 8
miles of streams support fish. The majority of these lakes and stream
capable of producing one or more of the eight species of salmonids in
sufficient quantities to attract both commercial and sport fisheries.

During the past three decades, a significant sport fishery has develop
Southeast and Southcentral Alaska as well as in the rest of the State.
statehood, sport fishing license sales have increased at the rate of 7
percent per year.

Fish stocks are heavily utilized for commercial marketing, outdoor rec
and subsistence living. Future utilization will depend upon harvest
management, natural environmental conditions, habitat protection, and
enhancement opportunities.

Habitat protection programs strive to maintain proper stream temperatu
dissolved oxygen levels, and adequate cover. Measures are taken to mi
sedimentation and insure free passage for fish. Special emphasis is p
identifying tributaries important as rearing habitat and carrying out
protection and enhancement measures to insure that productive capacity
these tributaries is not impaired.

Habitat protection and natural stream improvement alone may not provid
adequate basis for the restoration of salmon fisheries in Southeast Al
Natural spawning and freshwater nursery grounds are only partially uti
a result of the current depression of natural stocks. There is potent
increasing the supply of salmon for the fishery and building up deplet
natural populations by means of artificial recruitment.

Wildlife

Wildlife resources provide Alaska with important subsistence, recreati
commercial, aesthetic, and ecological values. Many wildlife species a
relatively abundant in Alaska, and include such important species as D
sheep, mountain goat, brown bear, polar bear, black bear, moose, carib
black-tailed deer, wolves, and wolverines. Many other furbearers, eag
waterfowl, and a wide variety of nongame birds and small animals are c
Sea mammals, such as harbour seals, sea lions, walrus, sea otters, kil
whales, humpback whales, and Dall porpoises frequent coastal waters.

Succession of vegetation in Interior Alaska is much more dynamic than
Southeast Alaska because of the major role of wildfire. The most prod
forested areas are generally those in which effects of fire are a majo
component of the ecology. Management of wildfire, use of prescribed f
carefully planned timber harvest practices are keys to maintaining the

Southcentral

This area provides some of Alaska's most significant wildlife habitat due to its high productivity and accessibility to the largest segment of Alaska's human population.

Prime habitat for millions of migratory waterfowl, shorebirds, and seabirds is found in such areas as the Susitna River lowlands, the Chickaloon Flats, Copper River Delta, Controller Bay, Icy Bay coastal lowlands, Portage Flats, and the Kenai-Swanson River. These areas provide resting, feeding, and staging grounds for hundreds of species of migrant waterfowl and other birdlife; they also provide key nesting and rearing habitat for about 170,000 ducks, geese, and swans, including the entire known population of approximately 30,000 dusky Canada geese. Trumpeter Swans breed throughout the Susitna lowlands, Kenai, Copper Delta, and coastal lowlands to Icy Bay. Their fall flight of 1,300 to 1,400 comprises a major portion of the known North American population.

Moose, Dall sheep, mountain goat, black-tailed deer, black bear, and brown-grizzly bear are the primary big game species in the area. Black-tailed deer are found on some islands of Prince William Sound, and on Kodiak and Afognak Islands. Coyotes, fox, wolverine, and wolves -- the principal predators -- are found on most of the mainland.

Furbearers such as beaver, marten, weasel, muskrat, and red squirrels are also found in the region. Upland game species include spruce and ruffed grouse, ptarmigan, and snowshoe hare. The principal marine mammals that utilize the coastlines and islands are sea otters, sea lions, and harbor seals. A variety of whales and porpoises frequent coastal waters.

Caribou primarily utilize the high, sparsely wooded inland, plateaus and uplands of such areas as the Kenai, Upper Susitna, and Mulchatna. Caribou populations have fluctuated widely and are currently low in the upper Susitna area. On the Kenai Peninsula they have increased to about 400. The Mulchatna herd in the Lake Clark area now numbers 14,000.

Alpine uplands and steep rocky slopes provide prime habitat for Dall sheep on northern and western portions of the Kenai, Chugach, and Talkeetna Mountains, and in the Alaska Range. Populations are at the carrying capacity of their ranges, and are currently stable.

Mountain goats are relatively common in the coastal mountains from Icy Bay to Cook Inlet. Inland from the Talkeetna Mountains, numbers are low. Populations were stable until the 1970's when area-wide declines occurred due to harsh weather and local overhunting.

Black bear are widely distributed. Highest densities occur in lowland forested areas of Prince William Sound, Kenai, and the lower Susitna Valley. Populations are generally stable. Brown bear are found throughout all of the area except upper Prince William Sound, where the population is limited. Bear

Representatives of most nongame bird species found in Alaska are found
the area due to its great habitat diversity. Major raptors such as the
and golden eagles, and a wide variety of hawks and owls are relatively

Southeast

Fifty-three species of mammals, 269 species of birds, and seven species
amphibians are found in Southeast Alaska, due to the region's great div
of habitat. Populations and distribution of game animals vary accordir
habitat conditions, severity of weather, and degree of predation.
Utilization, except adjacent to human population centers, has little ef
game population levels.

Approximately 4,000 breeding pairs of bald eagles inhabit Southeast Ala
and account for 80 percent of Alaska's northern bald eagle population.
activity along the coastline can result in disturbances to nesting and
areas and loss of nesting sites for this National resource.

Southeast Alaska annually hosts millions of migratory waterfowl and sho
enroute to and from northern Alaska and Canadian breeding grounds. Nea
entire known population of Vancouver Canada geese breeds and remains ir
Southeast Alaska throughout the year. Winter waterfowl populations var
according to the severity of winters, but probably average in excess of
500,000 annually (excluding seabirds). Waterfowl habitat conditions ar
generally good throughout the region.

Wolves are common through much of the mainland and on islands south of
Frederick Sound. Their abundance has become of particular concern wher
compete with humans for the harvest of other animals.

Estuaries and Tidal Meadows

The commercial and sport fisheries are dependent upon the forest ecosys
a source of high quality freshwater that enters the estuarine environme
Thousands of miles of shoreline border the Tongass and Chugach National
Forests. Along this coastline occur a wide diversity of the habitats t
make up the estuarine and associated tidal meadows environment.

All species of salmonids leave freshwater at some stage of life, and mu
in and migrate through estuaries on their way to the ocean. Estuaries
extremely important for spawning and overwintering herring and many oth
species of vertebrate and invertebrate fauna.

Estuaries and tidal meadows are also extremely important during some se
of the year for deer, bear, furbearers, marine mammals, and waterfowl.

Timber

Forests cover an estimated 11 million acres of Southeast Alaska and 2 m
acres of Southcentral Alaska, almost half the entire land area in these

Alaska yellow cedar, black cottonwood, and red alder.

Forest types in the Chugach National Forest include Sitka spruce, hemlock, white spruce, Alaska yellow cedar, black spruce, paper birch, quaking aspen, and black cottonwood.

Commercial forest land covers about 28 to 30 percent of the Tongass and Chugach National Forests. An estimated 16 percent of the commercial timber occurs in small, isolated tracts or on slopes where a variety of conditions preclude timber harvesting. A similar amount is found on slopes or in areas in which cost of access makes logging operations economically marginal.

Commercial forest lands provide habitat for the fish, wildlife, and birdlife found in the Alaska Region, and provide opportunities for a variety of qualit outdoor recreational experiences; it is for these reasons that a great deal o controversy has been generated by timber harvesting plans and activities.

More than 60 percent of the Tongass Forest timber that is purchased and manufactured comes from two long-term sales (50-year long-term sales were awarded in the 1950's to the Alaska Lumber and Pulp Company in Sitka, and the Louisiana Pacific Company in Ketchikan). Timber sales on the Chugach Nationa Forest have primarily been limited to comparatively small sales in response t local demand.

The Alaska Lands Act created 5.3 million acres of wilderness on the Tongass National Forest, removing approximately 1.4 million acres of commercial fores lands from the timber base. Concurrently, the Act directs the Forest Service to maintain a timber supply of 4.5 billion board feet per decade on the Tongass National Forest.

The Economic and Social Setting

Population and Economics

The ability of the Forest Service to supply resources to meet future national and local demands depends upon resource capabilities, available budgets, suitable markets and other socioeconomic characteristics. Such charactersitics as population growth, age distribution, economic growth and diversity, personal income, and employment can be directly correlated to resource demands.

The Alaska Department of Labor has estimated that Alaska's total population in 1978 was 416,400. This represents a 38 percent increase over the 1970 population. Although this is one of the fastest growth rates of any of the States, Alaska still has the smallest population density of any State, slightly more than one person per two square miles.

Since the end of World War II, population has increased substantially in Southeast and Southcentral Alaska.

Reliable information on the age structure, sex profiles, and racial composition of Alaska's population is difficult to obtain. The most recent information is derived from the 1970 census and is reproduced in Alaska Population Overview, a publication developed by the Alaska Department of Labor

The 1979 data indicate that Alaska's age/sex composition is similar to the general United States profile, but the median age (23 in Alaska, 28 in the United States) is younger, and the male population (54 percent) predominates.

Native populations (Indian, Eskimos, and Aleuts) constitute 17 percent of Alaska's total population. Three Indian tribes (Tlingit, Haida, and Tsimshians) inhabit Southeast Alaska. Athabascan Indians live primarily in the Interior of Alaska. Eskimos inhabit the coast of mainland Alaska from the Bering Sea and Arctic coastlines to Prince William Sound in Southcentral Alaska. Aleuts generally live on the westernmost third of the Alaskan Peninsula and on islands in or near the Aleutian Chain.

Alaska's population and economic growth has increased substantially since 1965, relative to the rest of the Nation. State and regional population growth rates are attributable to net migration of younger age workers and their families (approximately 72 percent), and to natural population increases

One measure of economic growth is gross national product, which represents total value of the final sale of goods and services.

Southcentral Alaska has experienced rapid economic growth corresponding to increased industrial diversification and reduced dependence on seasonal employment. Southcentral Alaska also shows greater growth in real and per

Employment is another measure of economic well-being. An increase in employment in sectors related to natural resources and/or the export of manufactured products and services stimulate employment in support industries. Basic and non-basic employment in Southcentral and Southeast Alaska is expected to increase through 1990. It should be noted that government is presently the leading employer, accounting for approximately 30 percent of the State's total employment.

In 1975, employment related to renewable resources development was seven percent; employment related to nonrenewable resources was six percent. Projected renewable and nonrenewable employment for the year 1990 is three to four percent and four to five percent, respectively. The figures do not include government employees.

In all cases, tourism shows greatest projected increases, followed by the timber and fishing industries.

Alaskan Lifestyles

People's lifestyles reflect the way they meet their physiological and psychological needs. Perhaps nowhere else in the National Forest System do management policies and practices affect a region and its communities to the extent that they do on the Tongass and Chugach National Forests. If a community is defined as a discrete, self-sustaining human settlement, then Forest Service management will have considerable effect on lifestyle preferences of residents close to Alaska's National Forests. Alaskan lifestyles are defined by a number of characteristics, including specific community economies (such as fishing, logging, or mining), and are characterized by remote living conditions, reliance on natural resources for subsistence, and a strong orientation to the out-of-doors for employment and recreation.

Two-thirds of Alaska's population live in Southcentral Alaska, and fifty percent of that population is concentrated in Anchorage, Alaska's largest city.

Southcentral

The Chugach National Forest in Southcentral Alaska plays an important role in providing lifestyles for a variety of people. The Southcentral Region supports a mixture of lifestyles ranging from typically urban in Anchorage -- to the Native Alaskan lifestyles of many outlying villages. Lifestyles throughout the Southcentral region are oriented to out-of-doors living, and are characterized by outdoor recreation activities throughout the year. That Anchorage residents buy more sport fishing licenses per capita than any major city in the United States is indicative of the importance of outdoor recreational activities in Alaskan lifestyles. A wide variety of recreation opportunities are available in the area, including big game and waterfowl hunting, seasonal boating, sport fishing, shellfish gathering, beachcombing, floatplane use, hiking, mountain climbing, cross-country skiing, snowmachine

In Southeast Alaska, the Tongass National Forest plays an even more important role in the lifestyles of Southeast residents, in that forest activities affect many elements of their daily lives.

Although geography and lack of development isolate many communities from each other, from the rest of Alaska, and from the continental United States, Southeast Alaska is a cohesive, environmental and social unit. The area is geographically isolated, cut off from the rest of the continent by an imposing, nearly impenetrable mountain barrier. Communities cling to narrow coastal shores. In the entire Southeast region, only six communities -- Thorne Bay, Craig and Klawock, Haines, Hyder and Skagway are linked to one another by roads. The result is a lifestyle characterized by neighborliness, self-sufficiency, and a willingness to get involved in community affairs. Many of the hazards of modern life -- overcrowding, and excessive regulation -- are uncommon. This atmosphere is the main reason that many individuals choose to live in Southeast Alaska.

For most residents the land and sea are the chief sources of recreation opportunities. Many residents, and most communities organize annual activities around such key events as the summer salmon derby and the fall deer hunt. Fishing, hunting, hiking, mountain climbing, boating, skiing, camping, photography, and other outdoor pursuits take up the leisure hours of Alaskan residents.

Most important, the land is a source of livelihood for Alaskans, both Native and non-Native. Except in Juneau, where government employment is an economic mainstay, most communities depend upon the timber industry, commercial fishing, subsistence, or tourism. Dependency on land is an economic fact of life in Southeast Alaska.

In many outlying villages, residents still depend upon hunting and fishing as essential food sources. Subsistence activities typically supplement low incomes. The subsistence lifestyle is valued as a cultural and traditional practice. Thus, protection of subsistence rights is equivalent to preservation of the historical and cultural character of Southeast Alaska. In 1978, concern over lifestyle preferences emerged in the Alaska Public Forum. An overwhelming number of Forum participants (72 percent) agreed that subsistence should have priority over commercial and recreational uses of the State's fish and wildlife. On the basis of the Alaska Public Forum results, the Alaska Growth Policy Counci' recommended that the State maintain and promote the existing policy, which gives subsistence use priority over uses of fish and wildlife resources.

Interior

The Interior of Alaska, which makes up the remainder of the State, has no National Forests but its resources will play an important role in the future of Alaska. The area is not only a major source of coal, oil, timber, natural gas, and minerals, but also provides for unique recreation experiences. The State and Private Forestry branch of the Forest Service is involved in

Water

Due to low quantities of dissolved solids and suspended sediments, water quality in the Region is very high. Fisheries resources depend on this high quality water. Mineral and organic particles, increased water temperature, and dissolved solids brought about by mass wasting, soil erosion, and vegetative removal along streams are factors that may contribute to lowered water quality. Drinking water supplies and, to a lesser extent, industrial water supplies are also dependent upon continued high quality and quantity of water.

Soils

The productivity potential of soils in the Region is currently very high and is expected to remain high. The production of all plants and animals including forest products are dependent upon this high productive capability. Mass wasting and erosion brought about by climatic events, road construction, borrow pits, and log yarding are the main soils problems affecting productivity.

Fish

The statewide objective of the Alaska Department of Fish and Game is to produce an annual harvest of over 115 million salmon. This production must be generated from lakes and streams in Southeast, Southcentral, Interior and Coastal Alaska. A large part of the production will come from the Interior. Assumptions upon which supply and demand can be based follow:

Historical harvests imply that Southeast and Southcentral Alaska have the capacity to produce more sport and commercial salmonids than are now produced. Therefore, at least part of the demand for salmon, trout and char can be satisfied by intensive management of wild stocks, supplemented by production from hatcheries, and natural habitat enhancement and restoration. The long-term objective of the State Department of Fish and Game for Southeast and Southcentral Alaska is to provide an annual harvest of 52.8 million salmon. This target anticipates expected demand.

Salmon stocks in Southeast and Southcentral Alaska can be increased considerably by regulatory and management policies, and by accelerated habitat enhancement programs. The Forest Service is primarily concerned with natural enhancement and restoration -- fishways, stream clearance, spawning channels, lake stocking and fertilization, in cooperation with the State Department of Fish and Game -- State and private sector hatcheries will also add to the number of salmon that can be harvested by the commercial fishery.

The Alaska Region's fish habitat enhancement program is linked to similar programs of the State Department of Fish and Game, the aquaculture associations, and other entities engaged in increasing production of salmonid

Interior

Most game habitats and populations are in fair to good condition in Inte
Alaska. Moose is generally the most important big game species, provid
both subsistence and recreation hunting. Sixty percent of the moose har
is for local use. Annual caribou harvests depend upon proximity of herd
villages. Most are taken for food; a few are taken by sport hunters for
food and trophies. Arctic herds are utilized primarily by local reside
The western Arctic herd, however, has suffered severe reductions due to
predation, weather, and heavy utilization by coastal villages.

Harvest of black bear is generally limited to local use. Grizzly bear a
in great demand; the annual harvest of less than 100 is a result of spo
hunting.

The Dall sheep harvest is primarily limited to trophy rams. About 75 pe
are taken by sport hunters; the remainder are taken for domestic use.
Probably fewer than 100 sheep are taken annually. The number of hunters
increasing, however, and success is decreasing. Increased restrictions
be required in order to meet demand.

Waterfowl use is primarily domestic. Hunting occurs during both spring
fall migrations. Sport hunting is pursued by both visitors and local
residents. Total numbers harvested, however, are insignificant.

The annual small game harvest supplements the subsistence harvest of bi
game. The level of the harvest is unknown but believed to be light to
moderate and to reflect cyclic abundance. Hunting of small game is gene
incidental to other hunting and trapping.

Subsistence demands will decrease, but to a lesser degree than in other
areas. Trapping will continue in accordance with the market value of fu
The use of wildlife will continue to be one of the major social and eco
resources.

Estimates of non-consumptive uses of wildlife are not available. Howeve
Alaska Department of Fish and Game and the Forest Service agree that
photography, viewing, nature study, and similar uses are growing rapidl
will continue to grow. Increasing numbers of hunting guides are includ
substituting these activities in their services. The number of private
parties and organized groups whose objectives are observation, study, a
photography is growing.

With the exception of local areas which are readily accessible from the
communities or when specific wildlife populations are limited it is dou
that hunting pressure is a serious limiting factor overall.

Moose are found in small numbers. Demand exceeds supply, and numbers c
affected by unregulated hunting pressure. In those areas where deer
populations are low due to weather and predation, demand generally exce

Southcentral

Little data on the condition of the wildlife resource is available in Southcentral Alaska. In general, fish and wildlife populations within the area are not significantly increasing due to use patterns, development, or environmental constraints. Patterns of use for both fish and wildlife vary, but most species receive maximum utilization in accessible areas.

There is growing demand for quality hunting. The Alaska Department of Fish and Game has recognized this demand, and acknowledges it in their Alaska Wildlife Management Plan. In certain areas the use of vehicles for hunting has been prohibited in order to limit access and reduce hunting pressure. Other areas will also be managed such as to produce trophies rather than meat as a primary hunting objective.

Alaska's human population has continued to increase, especially during the past decade. Since over half of Alaska's population resides within this area, consumptive demand for wildlife generally exceeds available supply. Growth is expected to continue; the most rapid growth will occur near Anchorage, in the lower Susitna Valley, and on the Kenai Peninsula. Growth in population and development of such remote areas as the Kodiak-Shelikof, Prince William Sound, and the Gulf of Alaska will be proportionately slower. Sport license sales are stable, with a growth rate of 7.4 percent annually. Non-consumptive uses will continue to grow; demand for management to enhance this type of activity is expected to increase.

Southeast

Deer populations in much of the Southeast region are presently low. The most significant factors appear to be harsh winters and predation by wolves.

Goat populations are also low throughout most of their range. The reason for this decline from past levels is not known. Suspected cause are predators, harsh winters, parasites, and hunting pressure.

Moose are found in larger mainland river drainages and on the Yakutat forelands. A series of hard winters, predation, and hunting pressure may have combined to bring about the serious decline in the Yakutat moose population.

Brown bear populations, with local exceptions, have probably not varied significantly over the years. Bear/human conflicts are increasing, especially near areas associated with development.

Estuaries and Tidal Meadows

Estuarine resources in those environments removed from communities are in a healthy state.

season. Volume per acre often declines through stand degeneration. As stands of old growth are cut, natural regeneration usually occurs, and growth rates of the new trees increase rapidly. The volume of wood fiber produced from regenerated stands should be approximately 70 percent greater per acre than that now produced from logging old growth stands. Further increases can be made through intensified management such as thinning, fertilization, or selection of genetically superior seed.

Of the total commercial forest land, approximately 62 percent can be logged with methods in common use today (if all commercial forest land was available for harvest). These techniques include high lead, tractor, single-span skyline (reach of up to 2600 feet), and A-frame logging from the beach. An additional 20 percent could become available for harvest if less common, more expensive systems such as multi-span skyline, helicopter, helistat, and balloon techniques were employed. The other 18 percent of the forest land is inoperable and therefore unsuitable for logging.

Only 45 percent of the commercial forest land in Tongass LUD's III and IV (Land Use Designation/allocation allowing timber harvest) can be logged with systems in common use today. An additional 20 percent may be harvested by non-standard methods.

No similar analysis has been completed for the Chugach National Forest. A preliminary analysis in 1979, which excluded Afognak Island, indicated of commercial forest land, 18 percent is in the standard and special components, 54 percent marginal, and 28 percent unregulated. Alaska Native land selections in progress and analysis in the Chugach Forest Plan will provide more up-to-date information.

Cultural Resources

The passage of the Alaska Native Claims Settlement Act (ANCSA) and the Alaska Lands Act has set in motion large scale changes in land use and ownership patterns. These changes will have a significant effect on the Region's cultural resource management program. The immediate potential effect of ANCSA is to place as much as 20 percent of the Region's inventoried cultural resources into private (Native, Regional, and Village Corporation) or State ownership. The Alaska Lands Act has added a small number of cultural resources on the lands transferred to the Region. The major effect, however, derives from the designation of large acreages of wilderness in the Tongass National Forest. This will have two impacts: 1) activities having a potential to disturb or destroy cultural resources will be concentrated into a smaller land base, and 2) cultural resources in designated wilderness, while afforded greater protection from ground disturbing activities, are generally managed purely for preservation.

he Chugach Forest has been altered by some form of development, most of which ccurred during the last 25 years. Under past management, opportunities to pread developmental impacts over a much broader Regional land base were vailable. However, in the future, development will be concentrated in a maller portion of the Region's National Forest land base. Much of this area ncludes primary marine travel routes and other public use areas in close roximity to communities. Given the established Alaska Lands Act allocation attern and timber volume mandate (4.5 million board feet per decade from the ongass Forest) the potential for conflict with timber harvest development mpacts in these areas may increase. Problems associated with this situation re complicated by constraints of steep slopes (visually sensitive) facing oat travel routes and the silvicultural and technical constraints of logging ystems available for harvesting those slopes with minimum visual impact.

ransportation

he transportation resource in Alaska has been recognized by Congress as being nderdeveloped compared with the lower 48. Vast land areas, sparce opulations, limited land use opportunities, and unique topography continue to ictate unusual solutions to transportation needs.

CHAPTER IV - ENVIRONMENTAL CONSEQUENCES

A. Introduction

The purpose of this chapter is to analyze the significant physical, biological, economic, and social effects likely to result from implementation of the alternative standards and guidelines for the ten policies discussed in this document. Alternative A is the current policy as written in the Southeast Alaska Area Guide. Alternative A is the baseline (existing situation) against which the consequences of other alternatives are displayed.

The discussion is organized so that consequences are woven into a policy-by-policy discussion of the environmental effects. The economic effects are discussed in a general manner because the vicinity and timing of actual policy application and implementation are not specified. More specific economic effects are contained in other documents, such as the Forest Land Management Plan and RPA Program final environmental statements. The most significant economic concern is attaining high resource targets while implementing management policies that maintain high standards of resource protection. In reality, resource trade-offs cannot be avoided when high timber yields are obtained from a limited land base. Currently, management strategy is to minimize adverse impacts on affected resources and user groups. Resource and forest land use conflicts have been largely resolved on the Tongass National Forest through land use allocations specified in the Forest Plan, by distributing resource targets, and by developing policy and direction for achieving targets.

B. Environmental Consequences and Identification of Preferred Alternative

1. APPROPRIATE SYSTEMS OF SILVICULTURE

NFMA Regulation 36 CFR 219.10(d)(1) requires that appropriate systems of silviculture used within the Region be described. A silvicultural management system is the entire process by which forests are tended, harvested, and replaced. It includes all cultural practices performed during the entire life of the stand, such as regeneration cutting, thinning, and improvement cutting. Only two forest management systems are available, even-aged and uneven-aged; each results in the production of a forest of distinctive form.

Alternative A represents a limited discussion of even-aged management prepared prior to promulgation of the National Forest Management Act Regulations. Area Guide policies anticipated the language of the Regulations (in draft at that time).

While for purposes of display, Alternative A is intended to reflect the current situation, the silvicultural policies in effect at the time permitted the use of even-aged management systems where deemed appropriate to meet multiple-use objectives. The Forest Service interpreted the draft regulations as strengthening the process by which clearcutting determinations were to be made. In Alternative B, even-aged management is the prescribed silvicultural system. It would be applied exclusively. In Alternative C, uneven-aged management is the prescribed silvicultural system, and would be applied exclusively. In Alternative D, even-aged management is the prescribed silvicultural system for all species, except where uneven-aged management is needed to meet other resource objectives. While it is not clear outside the Forest Service directives system, Alternatives A and D display no difference in concept or application. Alternatives B, C, and D however, fulfill NFMA requirements that appropriate systems of silviculture be described. The preferred alternative (D) also contains the silvicultural standards and guidelines appropriate to Forest types in the National Forests of Alaska.

The following analysis addresses the effects expected to occur as a result of implementing silvicultural systems. The analysis addresses impacts associated with even-aged versus uneven-aged managment of timber types found in Alaska.

a. Even-aged management.

Even-aged management produces stands in which all trees are of about the same age (a spread of 10 to 20 years is considered one age class). Regeneration is obtained through clearcutting, shelterwood cutting, seed tree cutting, or variations of these methods.

(1) Clearcutting is by far the most accepted method of timber harvesting in spruce-hemlock stands of the Pacific Northwest, Alaska, and British Columbia.

It has a number of positive and negative economic, physical and biological effects. It consists of removing the entire stand at one time and is less costly than other methods because taking all the trees at one time permits spreading fixed costs over large volumes per acre. It concentrates logging, roadbuilding, and administration into a smaller geographic area of the forest, and avoids the necessity to protect residual trees that would be left on the logging area through the use of other silvicultural systems. Clearcutting reduces the number of entries into a stand.

Clearcutting permits longer cable-yarding distances than would be practicable when yarding through standing timber, thereby reducing road mileage, development costs, and the soil and stream disturbance often associated with road construction.

Clearcutting is appropriate for old growth stands with large and often defective timber. Such stands occupy over 80 percent of the commercial

Especially important in Alaska, clearcutting permits more solar radiation to reach the forest floor and thereby increase biological decomposition of heavy organic accumulations. It is effective in dwarf mistletoe control, and facilitates residue management and fire protection. Through careful selection of equipment and yarding techniques, clearcutting can provide a measure of control over site disturbance and density of regeneration. Size, shape, and arrangement of clearcuts can be altered to reduce the visual effect of harvest cutting.

Clearcutting favors spruce in the regenerating stand. Disturbance associated with clearcutting destroys much advance hemlock regeneration, offsetting much of the initial advantage of the hemlock. A cutting area exposed to full sunlight favors the less shade-intolerant spruce (Ruth and Harris, 1979).

Under the uncut timber stand, a heavy mantle of humus and litter usually protects the soil surface. Harvesting timber disturbs part of this forest floor material and also adds large quantities of logging residue.

Generally, the soil is well protected. There are exceptions, such as roads, landing and decking areas, deep gorges, and shallow soil over bedrock, where it is easy to scrape off soil and deplete the site. Degrees of site disturbance depend in part upon harvest cutting design. Disturbance must be limited to a level that provides adequate soil protection.

Clearcutting also has some disadvantages. It has greater negative visual impacts compared to other harvesting systems. Adverse visual impacts can result because of contrast between clearcut openings and adjacent stands. Access by recreationists (and some wildlife species) may be affected by slash accumulations. Removal of old growth forest by clearcutting may have adverse impact to those wildlife species that are dependent of this habitat type such as Sitka black-tailed deer, mountain goat, Vancouver Canada geese, and bald eagles. The degree of impact will be dependent upon the extent of clearcutting and the severity of the winters where heavy snow accumulations in claercut areas making forage plants unavailable for deer. It should be noted that extensive clearcutting in the Queen Charlotte Islands (British Columbia, Canada) for many years has not resulted in reductions of Sitka black-tailed deer populations. The islands are, in fact, overpopulated with deer because of the absence of predators and other factors.

Competing vegetation thrives in full sunlight and tends to take over the site more quickly than with the shelterwood or selection systems of uneven-aged management. This can be a serious problem if natural regeneration or planting fails, thereby permitting brush to achieve a competitive advantage.

In general, clearcuts become overstocked and must be thinned. Overstocking can be detrimental to some wildlife species.

thinning, the loss does not enter into selection of the silvicultural system, so except for nutrients may be carried away in streamflow and should erosion occur, some nutrients will be lost with the soil. In general, total loss of nutrients is small relative to the nutrient capital stored in the soil or forest floor material.

Clearcutting is well adapted to harvest of old growth stands. Many old growth trees are defective, often mistletoe infected; from the standpoint of timber management they should be removed. But trying to remove only defective trees would be difficult. Heavy equipment would be required and damage to the residual stand would be inevitable.

The preceding analysis also applies to clearcutting of white spruce-hardwood types. In addition, the following items pertain to the white spruce-hardwood type.

Light treatment of white spruce is beneficial. Jones (1961) and Heit (1968) classify white spruce as a species requiring light for germination. Clearcutting permits seedbed preparation to be achieved more easily than by other systems. In most cases, one of the major obstacles to successful establishment of white spruce reproduction is the predominance of a humus seedbed type (Zasada and Gregory, 1969). Sites are better prepared for regeneration by creating conditions detrimental to the feather moss that inhibit tree establishment. Calliergonella (or Pleurozium) schreberi, a feather moss, generally forms a poor seedbed for spruce. The moss cannot ure direct sunlight and attendant conditions during the summer, and ally dries and disappears after logging opens the canopy. Hylocomium endens, another member of the feather moss group (as is C. schreberi), a similar, perhaps even more detrimental, effect on spruce eneration. Initial survival of white spruce is highest on mineral soil beds; their height growth, however, is best on mixed (mineral -humus) seedbeds (Zasada and Gregory, 1969).

ce establishment is hindered by the presence of herbaceous and woody ies due to competition for soil, water, light, and nutrients (Zasada Gregory, 1969).

ood brush and willow species are favored browse for moose. Where populations exist, they may serve to keep the brush in check until pruce are established.

cutting is the preferred method of harvesting this forest type. es should be kept small and be selected on the basis of insect hazard

the spruce-hemlock type are even more important in the white spruce-hardwood type because of lower product value.

(2) Shelterwood cutting of hemlock-spruce type involves removal of all trees in a series of two or more cuts over a period of not more than 20 years. In the first harvest the most vigorous, windfirm, cone-producing trees are left. Regeneration occurs between the first and last cuts under cover of a partial canopy. As soon as regeneration is established, a final cut may be made to remove the remaining overstory and permit the new stand to grow and develop in the open. For timber production purposes, shelterwood cutting is used in situations in which temporary retention of seed-bearing trees or partial shade will improve the reproduction over that obtained from a one-cut removal. However, other forms of shelterwood cutting could be used to achieve other purposes, such as improved visual appearance.

In a stand composed of both shade-tolerant hemlock and less tolerant spruce, this method favors the hemlock. In coastal Alaska, shelterwood cutting has not been practiced on a large scale. Similar treatments occurred in the very early days when mixed stands were cut to furnish hemlock piling or spruce trap logs and when high grade spruce was cut for the war effort during the early 1940's.

Economic comparisons with clearcutting are not available, but logging costs are higher with shelterwood cuttings because several entries are made into the stand and precautions must be taken, first to protect the residual stand and later to protect the established seedlings.

Special situations exist in which the shelterwood system could be used in preference to clearcutting. These include areas in which it is essential to maintain continuous tree cover, either for visual purposes or to prevent erosion.

Situations also exist in which the shelterwood system should not be used, such as in areas infected with dwarf mistletoe. Regeneration will be infected by seed showering down from the overstory, which perpetuates the disease. The system should also be avoided in overmature old growth stands where trees are large. Yarding large logs can damage the residual stand; residue accumulations are difficult to treat; residual old growth trees may suffer from exposure or wind damage; and regeneration is easily damaged during overstory removal.

Since the effects of shelterwood cutting have not been studied extensively in coastal Alaska, areas harvested under this method must be monitored to determine the extent of blowdown and other effects.

Shelterwood cutting has not been the preferred silvicultural system in Alaska for several reasons: an abundant seed source has nearly always existed adjacent to cutover areas, small seeds of the principal species disperse well over long distances, and trees are known to blowdown or break off if left unprotected.

Shelterwood cutting of the white spruce-hardwood type results in many of the same effects as shelterwood cutting of the spruce-hemlock type. In addition, however, the following considerations are pertinent to application of shelterwood cutting to white spruce-hardwood types, particularly in Southcentral Alaska.

Seed supply appears to be critical in white spruce, since good seed years may be 10 or 12 years apart (Zasada and Viereck 1970). The silvics of white spruce suit it to management under a two-cut shelterwood system . Coupled with salvage logging, reduction of insect infected trees is possible. Site preparation for regeneration may be required unless planting is prescribed. Shelterwood has not been studied extensively in Southcentral Alaska (Zasada and Gregory, 1969).

(3) Seed-tree cutting of the spruce-hemlock type is essentially the same as clearcutting, except that a few of the better trees of the desired species are left scattered over the area to provide seed for regeneration. These trees may or may not be harvested after the new crop is established.

In windblown coastal Alaska this system is the least likely to be successful. No evidence exists that it was ever tried.

This method may be applied in areas that do not have an adequate seed source in surrounding stands, and where mistletoe is not a problem.

Seed-tree cutting of the spruce-hardwood type has not been studied in Southcentral Alaska. It may assume importance if natural regeneration is planned, since good seed crops may occur only sporadically. Small seeds of the principal species disperse well over long distances.

b. Uneven-aged management.

Uneven-age management or "selection cutting" is the practice of making multiple harvest entries into a stand over its rotation period and during each entry removing only a portion of the stand. The amount of the stand removed during any one entry is variable. When uneven-aged reproduction cutting is the prescribed silvicultural system for all species, it results in a different mix of physical, biological, and economic effects than when even-aged management is the prescribed system. Two alternative approaches are available, individual tree selection and group tree selection.

(1) Individual tree selection system, hemlock-spruce type, creates maintains stands of uneven-aged. It requires removal of trees singly c small groups at short intervals, continued indefinitely. Small even-ag groups of seedlings appear in the openings thus created. Regulation of forest is based on development and maintenance of a range of tree diameters, with many trees in the smaller diameter classes and progressively fewer in the larger diameter classes.

Negative physical and biological effects that can result from the selec system are: frequent entries must be made into the stand to remove individual mature trees or small groups of trees; damage to crowns and stems would be a problem on steep slopes that must be cable-logged; and soil disturbance and root damage become problems when ground equipment used.

In addition, residual old growth trees often die from exposure or wind damage (Isaac 1956). Logging costs would be high because relatively sm amounts of timber would be removed at a time. Logging would be more complex than with other systems and would require more skill and supervision to prevent damage. The selection system will result in sta that are primarily hemlock.

Uneven-aged timber management, achieved through single tree selection, tends toward loss of diversity of plants and animals over time. This i due to a gradual loss of shade-intolerant plants and an increase in shade-tolerant plants. Further, uneven-aged management produces contir forest cover dominated by relatively mature trees. Such a forest lacks variety of distinct successional stages (grass/forb, shrub/sapling, pol etc.) that is required to provide optimum habitat for many species.

Despite these problems, positive effects resulting from this selection system may warrant its use in certain circumstances. Individual tree selection may have application in scenic areas where both esthetically appealing forest cover and commercial timber production are desired; although it may not be suitable for recreation areas where open underst conditions are preferred. It may also be a valuable tool for maintenar of deer habitat in the northern portion of the type. Finally, it resul in greater stability of environmental conditions for other associated animals and plants. The system has not been formally tested in the spruce-hemlock type. Areas harvested by this method must be monitored determine the extent of blowdown and other effects.

(2) Individual tree selection system, white spruce-hardwood type, pertains particularly to the spruce-hardwood type in Southcentral Alask The preceding discussion on individual tree selection for hemlock-spruc forest types generally applies to spruce-hardwood types as well.

Residual old growth spruce trees are susceptible to attack from spruce bark beetle. (Biological Evaluation R-10-81-1 Spruce Bark Beetle Chugach National Forest and Adjacent Lands, January 1981). This selection system will result in stands that are primarily spruce, thus reducing potential wildlife forage.

Site preparation would be needed because of feather mosses, but would be difficult to achieve.

(3) Group selection system, spruce-hemlock type, involves removal of selected trees of all size classes in groups of less than an acre up to two or three acres in size. Single tree selection may occur simultaneously in the area between groups. Regeneration occurs in the groups under conditions similar to those found in small clearcuttings. A strip modification could also be made. This system is used most often when the managed species have large, heavy seeds.

Group selection has not been studied in coastal Alaska. Logging equipment in current use is not well suited for this type of logging. This method would produce many effects similar to the individual tree selection system. The method might result in better tree growth, and provide a better mix of tree species than the individual tree selection system, but it may also be more vulnerable to windthrow than individual tree selection. It would provide more diversity for wildlife than individual selection and often meet visual resource objectives. Extensive use of this system would result in complicated management controls because of the extremely large number of small patch cuts.

Uneven-aged management by group selection, up to 1/2 acre, is better for insuring diversity of plants than is single tree selection. However, territorial requirements of many animal species favored by early succession exceed the size of the created opening. The result of group selection is high vertical diversity and low horizonal diversity which could reduce total animal diversity. Because of concentrated use by deer on relatively small areas, damage to vegetation, including tree regeneration, could be severe.

(4) Group selection system, white spruce-hardwood type, has not been studied in Southcentral Alaska. Present logging equipment is not well suited for this type of logging. This method would produce many effects similar to the single tree selection system. This might result in better tree growth and provide a better mix of tree species than the single tree selection system. It may provide better control of spruce beetle by removing infestation centers. Site preparation would be only slightly easier to achieve than in single tree selection. Feather mosses would inhibit natural regeneration. The method would provide more diversity for wildlife than the single tree selection system.

Extensive use of this system would also result in complicated management controls because of the extremely large number of small patch cuts. It would require site preparation or planting to regenerate spruce.

(5) Alaska hardwoods are more adversely affected by economic factors associated with the various harvest methods discussed under the hemlock-spruce type, because of lower product value.

No other evaluations are made because of the severe intolerance to shade exhibited by these species. In addition, the amount of land occupied by these hardwoods is small and generally scattered.

c. Even-aged and Uneven-aged Management

Application of both even-aged and uneven-aged silvicultural systems provides the greatest flexibility in meeting management targets and protecting resource productivity. However, relative employment of the tw systems will depend on: budget levels, positive timber sale economics (non-deficit sales), relative target levels of competing resources, exten of blowdown or other stand damage, growth loss to the stands, and the degree of resource protection sought in policy. It is anticipated that i a combined system, even-aged management would be predominant. Cost savin on even-aged areas could support uneven-aged systems designed to meet specific multiple use goals in other areas.

Economic effects between policy alternatives for timber primarily deal wi costs and resource trade-offs associated with silvicultural systems for timber management. Alternatives involve the two basic silviculture systems: even-aged and uneven-aged management. Over the long run, the ar harvested and the length of roads constructed are roughly equal for the t systems. However, more miles of road construction are associated with uneven-aged systems in the intial phases of management. This is due to t extensive harvest acreage required to meet annual allowable harvest volumes. Extending the miles of road per unit volume also increases road costs relative to other development costs and results in a greater dependence on supplemental funding for preroading. Both systems generall direct the harvest of higher quality stands first, in order to help finan initial road construction. Even-aged management systems provide more flexibility for limiting or increasing the amount of additional roading f future access. This is due to operational efficiencies that confine more harvest activities to smaller areas. Cost savings under even-aged system can therefore be used to support additional roading for future management

Analysis of even-aged management shows that for removal of 40 percent of the available timber volumes from the land, the funds available as purchaser credits in most cases will provide for the construction of need roads. Generally even-aged management would:

- Be best in that the majority of the sales would support road construction costs;

- Be able to spread road construction out over more of the rotation period, thus reducing the potential for impacts from extensive road construction activity during a short period of time;

- Minimize road operation and maintenance costs since fewer road miles would require maintenance during any time period.

Uneven-aged management would require the majority of the roads to be constructed during the first entry. A timber sale of 35 MMBF would need additional funding of $10-11 million dollars in addition to the available purchaser credits. The average cost of 450 million board feet per year would require initial additional investments of about $139 million dollars per year.

Depending on timber stand densities and the volume of timber removed from the stand at each entry, uneven-aged management would:

- Maximize the road construction mileage during initial entry;

- Increase road operation and maintenance costs over the rotation period;

- Require supplementing road construction costs with other appropriated funds;

- Increase the mileage of short term (temporary) roads.

2. MAXIMUM SIZE OF CREATED OPENINGS

The NFMA regulations provides for a maximum size limit where clearcutting is used as the silvicultural management system. NFMA also provides that exceptions to the standard may be considered for individual openings, and defines considerations which may be applicable.

Alternative A is the existing regional standard in which 160 acres is the maximum allowable size, unless exceptions are warranted.

Alternative B conforms to NFMA regulations and limits the maximum size of openings to 100 acres except under specific conditions where size may increase to 350 acres. These specific conditions are listed in Chapter II Alternatives.

Alternative C, the preferred alternative for maximum size of created openings, conforms to NFMA regulations and limits the maximum size to 100 acres as in Alternative B. However, there is no upper limit to exceptions in Alternative C if specific criteria are met, and in agreement with the interdisciplinary process recommendations.

Alternative C provides the flexibility to allow the land manager, through the interdisciplinary process, to make proper determinations of size as warranted by field conditions. Alternative C also requires the Regional Forester's review and approval of the rationale presented for exceeding standards where they are recommended in Forest plans.

Alternative D conforms to NFMA regulations and limits the maximum size of openings to 75 acres. As in Alternative C, there is no upper limit to exceptions in Alternative D, if the same specific criteria are met, and conform to the interdisciplinary process. Seventy-five acres was selecte as a maximum size because it approximates the average size of clearcut units harvested in individual timber sales in the time since the NFMA 100-acre limitation was anticipated.

Alternative D also provides the land manager with flexibility as appropriate and warranted by field conditions, and also requires Regional Forester's approval for exceeding the standard.

The differences among Alternatives A, B, C, and D are matters of scale, a not strictly quantifiable since the permitted exceptions from the NFMA regulations are intended to provide flexibility only as needed to produce more desirable contribution of benefits; and limited to individual clearc harvest units, rather than entire timber sale contracts.

Generally, it can be stated that larger clearcuts (in the range under consideration) result in:

- Improved cost effectiveness of individual timber sales;

- Reduced miles of road required per acre harvested;

- Improved control of dwarf mistletoe infection and consequently, improved second generation wood fiber yield;

- Improved windfirm conditions on sites where wind is a threatening factor to adjacent stands;

- Enhanced opportunities to establish logical yarding settings consistent with logging systems technology currently employed;

- Adverse visual or recreation impacts if harvest units are not appropriately located relative to viewer position or scale of surrounding natural features.

EVEN-AGED MANAGEMENT

NFMA Regulation 36 CFR 210.10(d)(2) provides for the establisment of standards and guidelines for the dispersal and size variation of the openings created by even-aged management.

Alternative A, the Area Guide policies, contains a minimum of policy direction in this regard.

Alternative B, which is the preferred alternative for dispersal and s variation of tree openings, provides a more comprehensive description the considerations to be made for short- and long-term planning. Alternative B can be expected to result in a more uniform approach to visualizing long-term resource needs, and provides an integrated appr to scheduling.

4. STATE OF VEGETATION THAT WILL BE REACHED BEFORE A CUTOVER IS LONGER CONSIDERED AN OPENING

NFMA has directed that standards be established to determine when an opening is no longer an opening. Previously, no standards existed, s there is no Alternative A, existing situation. Alternative B is a va alternative. The standard would be selected depending upon whether t principal objective to be met is visual quality, wildlife habitat, or silviculture. If visual quality is the primary consideration, an ope does not exist when vegetation masks stumps and other logging debris crown closure of 60 percent or greater, or gradation of contrast is achieved as seen from viewer positions. If wildlife is the primary consideration then the criteria are that vegetation has reached a hei approximately 10 feet or 75 percent of the area, and the vegetation i evenly distributed. Silviculture requires that merchantable tree spe the majority of which exceed five feet in height, occur at a stocking of at least 300 well-distributed trees per acre.

Criteria for visual quality and wildlife habitat were considered to b satisfactory guidelines to meet stand density and closure objectives the two resources. The criterion for silviculture is based on curren regional practices as applied to precommenrcial thinning and planting. Three hundred well-distributed trees per acre represent an average st of 12-by-12 feet.

Alternative C is the preferred standard defining cutover areas no lon considered openings, because it represents a minimum condition to be achieved in response to revegetating an opening. It provides for min height but leaves to the land manager the determination of stocking adequacy. It does not preclude the opportunity to satisfy visual, wildlife, or other silvicultural needs where warranted through applic of higher standards deemed appropriate through the interdisciplinary process.

Alternative C allows the reasonable application of regional silvicultural guidelines which provide that minimum stocking levels will be based on spacing, distribution, and stand management objectives, rather than a standard relationship between tree height, and crown closure in relation to steepness of slope and aspect. When these variables must be considered, they are best addressed in the field, based on site conditions and resource objectives and requirements.

Alternative C may result in better opportunities to achieve a more uniform gradient of regenerated stand heights thus improving the visual contrast where warranted. It can also be expected to be more economical.

The major negative effect would be that some might perceive that the guideline would be applied uniformly without consideration of other values.

Alternative B provides a range of opportunities to satisfy visual wildlife and silvicultural needs but is prescriptive beyond needs that may be encountered on a case-by-case basis. The major negative impact of Alternative B is that its application may, along with the size limitations on created openings, prevent timely harvesting of adjacent blocks of old growth timber, thereby unnecessarily increasing the costs of stand management.

5. MANAGEMENT INTENSITY

Alternative A contains those Area Guide policies which could be construed to be covered under the "umbrella" of Management Intensity.

Alternative B, the preferred alternative for management intensity, adds to Alternative A in response to the NFMA requirement in 36 CFR 219.10(d)(4). The Alaska Lands Act provides for increased management intensity to effect higher timber outputs. The Act provides for the improved production, protection and utilization of the timber resource and that the timber supply for dependent industries be maintained.

Alternative B, the preferred alternative, incorporates the intent of Congress, in the Statement of Policy transmitted by the President to the Speaker of the House of Representatives and the President of the Senate on June 19, 1980, as required under Section 8 of RPA. It provides also [36 CFR 219.10(d)(4)] that stands be examined in the first and third year following treatment.

Management intensity also includes guidelines for the selection, scheduling, and implementation of additional silvicultural practices such as thinning, fertilization, etc.

These are reflected in Alternative B and, in effect, represent the current situation. Since it has its basis in law, it is not a true alternative to A. It is presented in this manner to distinguish differences between the

6. UTILIZATION STANDARDS

NFMA Regulation 36 CFR 219.10(d)(4) requires the establishement of timber utilization standards.

Alternative A is current Area Guide Policy pertaining to wood utilization, however it lacks full definition of the utilization standards currently used by the Alaska Region.

Alternative B contains the selected policy alternative for utilization standards. It differs from Alternative A by defining sawlog merchantability standards currently used in the Alaska Region. The standards represent current utilization trends, market conditions and technological state-of-the-art.

While product species refers to sawlogs, half of the total wood currently harvested from the Tongass National Forest is manufactured into pulp. For base years 1978 and 1979 an average of 30 percent of the total harvest of spruce and 59 percent of the hemlock was manufactured into pulp, with the balance to cant production.

Alternative C differs from Alternative B by including utility volumes in the allowable sale quantity calculations. The Region lacks an adequate data base to accurately estimate the distribution of utility logs, or site conditions relating to production of utility volume. If such information were available, the effect would be one of increasing the annual allowable sale quantity above the 450 MMBF calculated in the Tongass Land Management Plan. The volume of utility logs was not included in original estimates of industry needs. Therefore, it is not consistent to include the volume as part of the 450 MMBF.

The use of utility logs in the production of cants increased slightly in 1979, however, as a percentage in the total harvest of pulp, use increased by approximately 46 percent over the 1978 consumption of utility logs.

7. BIOLOGICAL GROWTH POTENTIAL FOR DETERMINING CAPABILITY OF LAND FOR TIMBER PRODUCTION

No Area Guide policies are specified for biological growth potential. NFMA Regulations 36 CFR 219.10(d)(1) requires the determination of the biological growth potential for determining the capability of land for timber production. Alternative B incorporates this requirement which has been the National standard for Forest Survey and National Forest Systems for many years. As presented it is not an alternative to "no existing policy", however is presented in this way to bring the Regional Plan up-to-date in accord with this requirement. No research data is currently available to quantify impacts of alternatives to current National standards.

8. UNIT OF MEASURE FOR EXPRESSING MEAN ANNUAL INCREMENT

NFMA Regulation 36 CFR 219.10(d)(7) requires the establishment of such a unit. Alternative B, which contains the preferred alternative, provides that cubic-foot volume will be the unit of measure for CMAI in the management of even-aged stands.

Alternative B represents the current situation. It is displayed as an alternative to display differences between the Area Guide and improve direction.

9. TRANSPORTATION AND UTILITY CORRIDORS

The preferred alternative for transportation and utility corridors is Alternative B. It combines policies from the resource management and transportation corridor portions of the Area Guide with new material. It is important to recognize that the Forest Service is not a public road agency. Most of the approximately 200 miles per year of road constructed by the Forest Service in the Region are built with purchaser credits as a part of the timber sale program of the Region. The Forest Service is limited by the 1964 Forest Roads and Trails Act to require road construction by timber purchaser only to the standard needed for timber harvest and removal. Traffic volumes are generally low and can usually be handled by single lane roads.

Typical 1980 construction costs for a single lane road with turnouts (14 foot width) including bridges was $180,000 per mile. A similar road without long-term drainage structures (temporary road) costs about $127,000 per mile. The interrelationships between economic, environmental, and social considerations are recognized in this policy. The trade-off relationships involved in analysis and decisions are highlighted and made explicit. Enhancement of the processes to display the causes and effects of trade-off alternatives is directed.

The preferred alternative provides that the Forest Service will continue to work and coordinate with other Federal, State, and local agencies in transportation planning.

Adoption of this policy would provide greater recognition of the social impacts of transportation connections between communities. Adoption of this policy may limit the administrative option of interconnected road systems for the Forest Service.

The environmental consequences of road construction will be addressed for each route in the documentation to meet the requirements of NEPA. Forest planning will need to address an overview of these consequences in dealing with the allocation of lands for transportation corridors. The land transportation systems are expected to provide greater public access to resources with associated people-related impacts.

The Forest Plan, as the land allocation and scheduling framework of resource activities, needs to show the major transportation system to be used to access the National Forests.

Development of road terminal transfer facilities (where the travel modes of land and water meet) is very important to fully utilize the growing transportation system. Air/water and air/land transfer facilities will also become more important to the system, and should be incorporated as needs become apparent.

Those Forest development corridors which provide potential links between private commercial and/or residential developments and the State Highway System should be considered for eventual transfer to the State Highway System. Planning for these roads must consider the cultural effects on the affected communities.

The effect of developing a road system connecting to communities can, in some cases, be a defacto extension of the State Highway System. Coordination with the State can limit the effects of these extensions on communities and result in the State or communities assuming operation of the roads. With the development of the transportation system the increased access and use by people is expected to result in the increase in people problems.

Coordination with State and local road authorities during development of these facilities is necessary to serve all needs with best economy.

Utility corridors will usually follow land transportation routes. It is recognized that utility corridors do not have the same siting criteria as roads or railroads. Where environmental and economic consequences of parallel siting favor other routes, they may be used. To the maximum extent feasible, proliferation of corridors is to be avoided.

10. AIR QUALITY

The amended Clean Air Act of August 1977 includes three air quality classes that will be applied to different geographical areas. The Class I, II, and III designations are not standards in themselves. The classes specify the maximum allowable increases in concentrations of sulfur dioxide and particulate matter that are permitted over the baseline concentrations. In no case can the increment exceed the National Ambient Air Quality Standard.

A Class I designation permits only a minor increase above the baseline level. A Class II designation permits moderate amounts of particulates and higher levels of nitrogen and sulfur compounds normally associated with moderate industrial growth. A Class III designation permits higher levels of particulates and other emissions often accompanying industrial operations.

it is currently through the life of this plan. Localized smoke accumulations from wildfire and prescribed use of fire is expected. Coordination with the Alaska Department of Environmental Conservation will mitigate short-term effects; no long-term effects are foreseen. With few exceptions, Alaska is classified for prevention of significant deterioration (Class II). This classification applies to all airsheds on National Forests. Increments of air quality are not expected to be exceeded by actions on the National Forests. Activities expected to affect air quality will be coordinated with the State of Alaska.

The Interdisciplinary Team (IDT) responsible for preparation of the Draft Environmental Impact Statement is listed alphabetically below.

Susan L. Boyle - Team Leader	MLA Environmental Planning 21 years experience
Helen C. Castillo - Planning Systems Specialist	BA Anthropology 7 years experience
William G. Edwards Budget Officer	MS Natural Resources Admininstrati 18 years experience
Joseph R. Mehrkens - Regional Economist	MS Economic and System Analysis 4 years experience
Robert M. Muth - Regional Social Scientist	MPA Public Administration 7 years experience
William R. Overdorff - Forester	BS Forestry 27 years experience
Thomas J. Sheehy - Soil Scientist	BS Soil Science 15 years experience
W. L. Sheridan - Fisheries Biologist	BS Zoology & Fisheries 25 years experience
Kenneth D. Vaughan - Transportation Planner	MS Civil Engineering 15 years experience
Eugene E. Wheeler - State & Private Forestry	BS Forestry 24 years experience
Ronald L. Wood - Regional Landscape Architect	BS Landscape Architecture 15 years experience

Clerical Support Group

Michelle M. Geraghty

Cathy L. Grantz

Jane H. Hurst

Susan C. McCoy

Tricia L. Parr

CHAPTER VI - DISTRIBUTION LIST

Consultation with others and distribution of the draft Environmental Impact Statement and draft Regional Plan is keyed to a master mailing list of over 4,700 entries. A partial listing of organizations, State and Federal agencies, and Native corporations follows. While only one reference is made to each organization or agency, the drafts have been distributed to all offices of the agency or organization requesting copies.

Federal Agencies and Elected Officials

Honorable Frank Murkowski, US Senate
Honorable Ted Stevens, US Senate
Honorable Don Young, US House of Representatives

Agricultural Stabilization and Conservation Service
Bureau of Indian Affairs
Bureau of Land Management
Bureau of Mines
Department of Energy
Department of Interior
Environmental Protection Agency
Farmers Home Administration
Federal Highway Administration
Fish and Wildlife Service
Geological Survey
National Marine Fisheries Service
National Park Service
Small Business Administration
Soil Conservation Service
US Coast Guard

State Agencies and Officials

Honorable Jay Hammond, Governor of Alaska
Honorable Terry Miller, Lieutenant Governor of Alaska
President, Alaska State Senate
Speaker, Alaska State House of Representatives

Alaska Department of Commerce and Economic Development
Alaska Department of Community and Regional Affairs
Alaska Department of Environmental Conservation
Alaska Department of Fish and Game
Alaska Department of Natural Resources
Alaska Department of Transportation and Public Facilities
Office of the Governor, Division of Policy Development and Planning
(State Clearinghouse)

e Corporations

Corporation
Incorporated
c Slope Regional Corporation
g Straits Native Corporation
ol Bay Native Corporation
ta Corporation
Fox Corporation
ch Natives, Inc.
Inlet Region, Inc.
n, Ltd.
elt, Inc.
Corporation
Totem Corporation
g, Inc.
kwim Corporation
Corp.
es of Kodiak, Inc.
ska Corporation
via Native Association, Inc.
-Seet, Inc.
Atika, Inc.
lek Corporation
eenth Regional Corp.
k Native Corporation

izations

a Alpine Club
a Appraisal Association, Inc.
a Biological Research
a Center for the Environment
a Chapter, Association of General Contractors
a Coalition
a Conservation Foundation
a Conservation Society
a Energy Extension Service
a Fisherman's Association
a Loggers Association
a Lumber and Pulp Co.
a Miners Association
a Natural History Association
a Oil and Gas Association
a Professional Hunters Association, Inc.
a Research Co.
a Salmon Charters

Alaska Visitors Association
American Mining Congress
American Wilderness Alliance
Anaconda Copper Company
Anchorage Convention and Visitors Bureau
Arctic Environmental Information and Data Center
Central Council of Tlingit and Haida Indian Tribes of Alaska
Cook Inlet Aquaculture Association
Cordova District Fisheries
Delta Chamber of Commerce
Exxon Company, USA
Fairbanks Environmental Center
Far North Ski Guides, Inc.
Federation of Western Outdoor Clubs
Friends of the Earth
Furthest North Girl Scout Council
Glacier Guides, Inc.
Great Lakes Forest Research Center
Heritage North
Historic Landmarks Preservation Commission
International Forestry Consultants, Inc.
International Longshoremans and Warehousemans Union
International Woodworkers
Izaac Walton League
Juneau 2000 Caucus
Juneau League of Women Voters
Ketchikan Air Service, Inc.
Kodiak Area Native Association
Louisiana Pacific - Ketchikan
Metlakatla Indian Community
Mitkof Lumber Company, Inc.
Morrison Knudsen Company, Inc.
Mountaineering Club of America
National Audubon Society
National Outdoor Leadership School
National Wildlife Federation - Alaska Resource Center
Noranda Explorations, Inc.
Northern Southeast Regional Aquaculture Association
Northland Wood Products
Northwest Mining Association
Outdoors Unlimited, Inc.
Petersburg Conservation Society
Petersburg Indian Association
Petersburg Vessel Owners Association
Renewable Resources Associates
Resources for the Future
Schnabel Lumber Company
Sealaska Cruises, Inc.
Sealaska Timber Corporation

Society of Range Management
Southeast Alaska Mountaineering Association
Tanana Chiefs Conference, Inc.
The Alaska Railroad
Tongass Historical Society Museum
Trees Unlimited
Trustees for Alaska
Whittier Historical and Fine Arts Museum
Wildlife Management Institute
Wildlife Society
Wilderness Research Institute
Wilderness Society

APPENDIX 1

Policy Cross Reference to the Southeast Alaska Area Guide

This appendix is provided to show how each policy in the Southeast Alaska Area Guide compares with each policy in the Regional Plan. The reason for the change/reference column contains a statement of why the policy changed or reference to where in the EIS policy analysis can be found.

Some policies have been referred to Forest planning for review or modifications, if necessary. These policies are generally more prescriptive and are not appropriate for regional level direction. Area Guide policies referred to Forest planning are to be considered firm direction to the Tongass National Forest and Chugach National Forest. They may be modified through the Forest planning process.

Cross reference to the Wilderness Account, Forest Insect and Disease Management and Pesticide Use Account, State and Private Forestry Account, and Research Account have not been included in this appendix. All policies in the Wilderness Account changed due to explicit direction in the Alaska Lands Act. The Forest Insect and Disease Management and Pesticide Use (re-named Forest Pest Management in the Regional Plan) policies have not been changed. State and Private Forestry and Research policies have not been changed significantly.

HUMAN AND COMMUNITY DEVELOPMENT

Southeast Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
1. A comprehensive community and regional socio-economic profile for the planning area will be developed during the land management planning process using either one or a combination of the following: a. Intergovernmental Personnel Act arrangement with the State of Alaska, Department of Community and Regional Affairs. b. Cooperative agreements with the State of Alaska, Department of Community and Regional Affairs. c. Utilization of Forest Service in-house capabilities. d. Utilization of private consultants. e. University of Alaska.	1. Cooperatively develop a comprehensive community and regional socioeconomic profile for each Administrative Area on the Tongass and Chugach National Forests. Use the available resources of the Forest Service, State of Alaska, private consultants, colleges, and universities.	Clarification
2. Forest Service activities will be coordinated with local communities in the following manner: a. The plans and concerns of local communities as represented by their governing bodies and the public involvement process will be incorporated in alternatives developed at all Forest Service planning levels. b. Community preferences will represent an integral factor in Forest Service decisions where communities and residents may be significantly affected. c. Alternatives developed during the planning process must reflect community needs and preferences as expressed through the public involvement process prior to starting the environmental impact statement procedure. Examples of community needs might include areas required for recreation or subsistence activities, aesthetic considerations, lifestyle options,	2. Coordinate Forest Service activities with local communities in the following manner: a. Incorporate the plans and concerns of local communities, as represented by their governing bodies and through the public involvement process in alternatives developed at all Forest Service planning levels; b. Identify and consider community preferences in Forest Service management decisions where communities and residents may be significantly affected; c. Develop alternatives during the planning process that reflect community needs and preferences as expressed through the public involvement process prior to starting the environmental impact statement procedure. Examples of community needs include areas required for recreation or subsistence activities, aesthetic considerations, lifestyle options,	Clarification

3. The Forest Service recognizes the State of Alaska as having the primary leadership role in setting policy governing the establishment of temporary or permanent communities.	3. The State of Alaska has the primary leadership role in setting policy governing the establishment of temporary or permanent communities.	Clarification
4. The Forest Service will promote research to quantify nonconsumptive and amenity uses so that these values can be more easily equated with those uses already having quantifiable values.	4. The Forest Service will promote research to quantify nonconsumptive and amenity uses so that these values can be more easily equated with those uses already having quantifible values.	No Change
5. Provide opportunities, such as an independent timber sale program geared to small operators, for the development or utilization of Forest resources by small entrepreneurs as well as large companies or corporations.	5. Provide opportunities, such as an independent timber sale program geared to small businesses, for the development or utilization of Forest resources by small entrepreneurs as well as large companies or corporations.	Clarification
6. Develop an action program to increase YCC facilities and activities. This program will include coordination with the State of Alaska and other Federal agencies involved with YCC.	Omitted	Termination of program
7. Work with citizens groups, service organizations and local and State of Alaska governments to initiate needed employment and manpower programs.	6. Work with citizen groups, service organizations and local and State of Alaska governments to initiate needed employment and manpower programs.	No change
8. Through the Forest Service's State and Private Forestry programs, work with the State agencies and private land owners to encourage forest industries, including tourism, outdoor recreation, timber and other opportunities that will contribute to economic development and stability.	7. Through the Forest Service's State and Private Forestry programs, work with the State agencies and private land owners to encourage forest industries, including tourism, outdoor recreation, timber and other opportunities that will contribute to economic development and stability.	No Change

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
No Area Guide policy	8. Work cooperatively with State agencies and private organizations in carrying out the subsistence provisions in the Alaska Lands Act. The State of Alaska has the lead role in determining viable subsistence, sport and commercial use levels for fish and game populations.	Alaska Lands Act
No Area Guide policy	9. Use economic efficiency as one of the standards for evaluating alternatives in environmental analyses where significant changes in costs and/or outputs are considered.	Forest Service Internal Direction
No Area Guide policy	10. Identify and display economic and social impacts of programs and/or management alternatives in environmental analyses where significant changes in outputs between alternatives are considered. Give particular emphasis to industries which are dependent on National Forest Program outputs such as timber, fisheries, and tourism.	Alaska Lands Act
No Area Guide policy	11. A well-designed, well-executed public involvement program is important in identifying public preferences and social values. Develop and implement comprehensive public involvement activities during major Forest Service planning efforts. Include a systematic analysis process which is based on established professional principles.	Alaska Lands Act

1. A soil monitoring program will be continued on the Forest to measure soil behavior and response under various conditions. This program will provide a scientific means to evaluate losses of nutrients and/or soil material as a result of land management activities. Management standards and techniques will be revised, if necessary, as a result of this program to meet the applicable goals and policies of the Federal Water Pollution Control Act and those listed in the soil, water, minerals, fisheries and timber sections of this Guide. Management decisions directed at or affecting the soil resource will be based on the best available knowledge to provide a sound basis for professional judgement.	1. Continue a soil monitoring program on the Forests to measure soil behavior and response under various conditions. This program will provide a scientific means to evaluate losses of nutrients and/or soil material as a result of land management activities.	Clarification
2. A soil resource inventory and report will be made for all projects significantly affecting soil resources. The inventory and reports will identify and describe the soils, determine their capabilities and limitations and provide information necessary for preparing prescriptions to manage and protect the soil and other resources consistent with the goals and policies established in this Guide.	2. Conduct a soil resource inventory and prepare a report for all projects significantly affecting soil resources.	Clarification
3. Management activities on braided stream bottom lands will be preceded by inter-disciplinary team (IDT) evaluation. Timber will not be cut unless natural or artificial regeneration is assured within five years of harvest; and fish, water and soil resources can be adequately protected. The adequacy of protection will be determined through the IDT process.	Omitted	Content is included in the Timber Element, Fisheries Element, and Wildlife Element.
4. Tractor logging will be permitted only on soils where natural or artifical regeneration occurs within five years with no impairment of soil productivity and where fish and water resorces can be protected.	Omitted	Content is included the Timber Element, Fisheries Element, and Wildlife Element.

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
5. Provisions for revegetating and stabilizing temporary roads, landings, borrow pits, skid trails and other human-caused soil disturbances will be planned through the IDT process and incorporated into project plans. Cut and fill slopes that require stabilization will be stabilized by the most appropriate means as determined through the IDT process. Stabilization may include revegetation or retaining structures or combinations of both methods. Where revegetation measures are required, seeding or planting will take place the first growing season following disturbance. Temporary roads, landings and skid trails will be rehabilitated following cessation of use. Borrow and rock pits no longer needed will be drained, unless developed for fish or waterfowl, and mineral soil revegetated using the most appropriate means. Areas already disturbed or not covered by contract will be rehabilitated on a priority basis by the Forest Service as watershed rehabilitation money becomes available. Highly erodable terrain directly affecting fish and water resources will receive the highest priority when scheduling rehabilitation projects.	3. Incorporate provisions for revegetating and stabilizing temporary roads, landings, borrow pits, skid trails and other human-caused soil disturbances into project plans. Where revegetation measures are required, seed or plant the first growing season following disturbance or cessation of use. Drain borrow and rock pits no longer needed unless developed for fish or waterfowl. Revegetate mineral soils using the most appropriate means. Rehabilitate areas already disturbed or not covered by contract on a priority basis as watershed rehabilitation money becomes available. Highly erodable terrain directly affecting fish and water resources is the highest priority for scheduling rehabilitation projects.	Clarification
6. Logging or roading will not be done on slopes greater than 75 percent unless approved in advance by the Forest Supervisor following IDT planning. Developmental activities on slopes between 35 and 75 percent will receive prescriptions by the IDT to reduce the possibility of soil failure. Developmental activities will not be approved on terrain where IDT evaluation indicates a high likelihood of mass failure and where mitigating measures are not practical.	4. Unless approved in advance by the Forest Supervisor, do not log or road on slopes greater than 75 percent. Prepare prescriptions to reduce the possibility of soil failure on slopes between 35 and 75 percent if a risk of failure exists.	Clarification
7. Crossings of V-notched drainages will be designed to prevent debris jamming, unless IDT evaluation indicates that a culvert is acceptable. Crossing locations	5. Design crossings of drainages to prevent debris jamming.	Clarification

8. Rock quarries and borrow pits will be planned through the IDT process. Blasting will be avoided on potentially landslide-prone areas during or within 72 hours following heavy rainstorms, as determined by a hydrologist. Where other sources are available, borrow pits will not be located on such areas. Where no other alternative exists, quarries will be stripped of their overburden and the excavated material hauled to a stable location, seeded with grass and fertilized. The IDT's engineering representative will approve the location of the pit and waste area after advice from appropriate specialists.	6. Locate rock quarries and borrow pits and time their use to minimze the impacts upon other resource values.	Clarification
No Area Guide Policy	7. Conduct development activities on organic soils and mineral soils classified as wetlands in compliance with existing executive orders.	Executive Order 11990 Protection of Wetlands
	Air	
No Area Guide policy	The only Forest Service activity which has significant impact on air quality is prescribed burnig. Smoke management will be coordinated with the Alaska Department of Environmental Conservation to assure that air quality increments are not exceeded. Local sources of emission will be evaluated to assure that airshed integrity is maintained.	National Forest Management Act

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
1. Maintain a long-term monitoring program on representative watersheds to assess land management impacts on water quality and stream and site productivity in accordance with the objective limitations of the non-point pollution monitoring program. Data collected through the monitoring program will be used to: a. Determine compliance with and evaluation of Alaska State Water Quality Standards. b. Evaluate impacts of management practices on water resources of the Tongass National Forest. c. Develop "best management practices" to be implemented on unmonitored watersheds to protect watershed values and assure compliance with water quality standards.	1. Maintain a long-term monitoring program on representative watersheds to assess land management impacts on water quality and stream and site productivity.	Clarification; details referred to Forest Planning.
2. Maintain a long-term monitoring program on representative log dump and storage sites to assess the effects of organic accumulation and leachates on water quality and marine biota.	2. Maintain a long-term monitoring program on representative log transfer and storage sites to assess the effects on water quality and marine habitat.	Clarification
3. Cooperate and participate with the State in identifying and monitoring new non-point water pollution sources and enforcing water quality standards. The Regional Forester will serve on the State Policy Advisory Committee (PAC) to aid State planning in dealing with non-point pollution problems under Section 208 of the Federal Water Pollution Control Act Amendements of 1972.	3. Cooperate and participate with the State of Alaska through the 208 Cooperative Agreement to identify and monitor new non-point water pollution sources and to enforce water quality standards.	Clarification

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
4. Water resource inventories and reports will be used to evaluate potential impacts of land management activities. Sensitive landforms where non-point source pollution problems are likely to occur will be identified and the probable impacts of management alternatives evaluated. The policies below will be followed unless an IDT investigation indicates acceptable management alternatives exist, in which case site-specific prescriptions will be applied to assure watershed protection: a. Roads will not be built across alluvial flood plains or mass wastage areas. b. Roads will only be built across streams in stable reaches. c. Roads and borrow pits will be located away from water courses. Whenever locations near stream courses are recommended, provision must be made for drainage from roads or materials sites to run off through a vegetative screen or sediment basin prior to entering a water body. d. Channel changes will require approval by the Forest Supervisor after consultation with the Alaska Department of Fish and Game.	4. Use water resource inventories and reports to evaluate potential impacts of land management activities. Identify sensitive landforms where non-point source pollution problems are likely to occur and evaluate probable impacts of management alternatives.	Clarification; details referred to Forest planning.
No Area Guide Policy	5. Manage floodplains to avoid adverse impacts associated with occupancy and modification and in compliance with executive orders.	Executive Order 11988 Floodplain Management Executive Order 11990 Protection of Wetlands

1. The Forest Service, the Alaska Department of Fish and Game, the Alaska Department of Environmental Conservation, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service will be fully coordinated at all levels of the planning and decision-making processes. Optimum use will be made of the information, data and expertise of these agencies with the understanding that all are partners in achieving the collective goals of their respective constitutional and statutory authorities.	1. fully coordinate Forest Service activities with other agencies involved with the fishery resource.	Simplification
2. Where Forest Service habitat management or land use decisions are or may be affected by Alaska Department of Fish and Game management programs, the Forest Service and the Department will exchange their concerns and work to develop mutually acceptable solutions. Included will be situations involving siting of aquaculture facilities; user-group conflicts over land management determinations; questions on determination of access and permitted activities and concentration or dispersal of harvesting pressures; and other instances where fish habitat, fisheries resources and land use management are intertwined.	2. Solve mutual problems and achieve common goals and objectives through the Master Memorandum of Understanding between the Forest Service and the Alaska Department of Fish and Game.	Clarification
3. The Forest Service recognizes fishery resources as a major component of the Tongass National Forest and the source of numerous important products, benefits and services. Fishery resources are to be considered no more or no less important than the other renewable resources of the National Forest.	3. The Forest Service recognizes the fishery resource as a major component of the National Forests and the source of numerous important products, benefits and services. Give fish habitat management needs equal consideration with other resources in all Forest Service programs.	Clarification
4. Management decisions concerning fish habitat will be based on sufficient knowledge, information and data to provide a sound basis for professional judgement.	Omitted	Unnecessary

5. The Forest Service designates any lake or stream on National Forest land that supports anadromous or resident fish as fish habitat. This includes, but is not limited to, all streams designated by the Alaska Department of Fish and Game as salmon streams and potential habitat which could be utilized as a result of enhancement programs. The Forest Service recognizes that the entire watershed, including trees, shrubs and grasses, and particularly streamside and lakeside vegetation, is an integral component of the total ecosystem and will be managed as such.	4. The Forest Service considers any lake or stream on National Forest land that does or can support anadromous or resident fish as fish habitat. This includes, but is not limited to, all streams designated by the Alaska Department of Fish and Game as salmon streams and potential habitat which could be used as a result of fishways, or other enhancement. The Forest Service recognizes that the entire watershed, including trees, shrubs and grasses, and particularly streamside and lakeside vegetation, is an integral component of the total ecosystem and should be managed as such.	Clarification
6. At the allocation level, the interdisciplinary team process will provide sufficient information to permit allocations which recognize the capabilities and sensitivities of major fish habitat areas and the cumulative impacts of multiple land use activities over large areas. In the prescriptive phases of the planning, IDT's will validate allocations, write prescriptions and monitor actions. a. During the land management plan phase, an IDT will assist in land allocation decisions by providing sufficient information to permit allocations which recognize the capabilities and sensitivities of major fish habitat areas. Of special importance will be identification of areas which warrant designation as LUD I, II or III because of high vulnerability to development impacts, productive capacity, associated recreational opportunities, or other factors. In addition, the IDT process will be directed at responding through allocations to the potentiality of cumulative or collective impacts resulting from multiple land use activities over large areas which may escape notice or control during the implementation phases. b. During the prescriptive phase, the IDT process will be utilized as described in the succeeding policies.	Omitted	Referred to Forest Planning

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
7. All proposals for land use 1/ (e.g., logging, hatcheries, hydroelectric projects, developed recreation facilities) will require the completion of a prescriptive plan, with the participation of an IDT. The plan will specify: (1) appropriate Fish Habitat Management Units and (2) prescriptions necessary to meet the goal for fish habitat set forth in this section of the Guide. Mineral development activities require an operating plan that will involve the IDT process.	5. Complete a prescriptive plan for proposals for all land use activities:	Clarification Details referred to Forest planning
a. The Fish Habitat Management Unit (FHMU) will consist of all components of the fish habitat as identified through the IDT process. The Unit may be as narrow as all trees within crown height of a fish stream; it may be widened in areas of high potential windthrow or unstable soils or as otherwise necessary to recognize the charactersitics and sensitivities of the area to meet the management goal.	a. The Fish Habitat Management Unit (FHMU) includes all components of the fish habitat as identified through the interdiciplinary process. The FHMU is that portion of land including the stream channel and the stream banks defined as necessary for the protection of stream habitat and maintenance of stream productivity. Give Special consideration to that area 100 feet wide on either side of the stream.	
Within the FHMU, timber management practices and other land use activities will be prescribed to the degree necessary to meet management goals for fish habitat. The method of logging within the FHMU will provide for protection of soils, duff and litter layers, shrubs nad uncut trees. Special logging methods, streamside strips of uncut timber, cutting unit layout schemes and other appropriate approaches will be recognized as viable options to protect fish habitat.	The FHMU is managed as a resource no more or less important than the other resources. Within the FHMU, timber management practices and other land use activities are prescribed to meet the management goals for fish habitat.	
Those waters determined not to be fish habitat but which influence fish habitat will be adequately protected to insure that the quality of freshwater and marine fish habitat downstream is not impaired. Such protection measures are described in the Soil and Water Accounts of this Guide.	b. Identify temperature-sensitive streams, recognizing State water quality standards pertaining to fish habitat. Such streams require special prescriptions for management of the shade-producing streamside overstory (trees, shrubs, grasses). The amount of overstory that can be removed is determined by reference to guidelines in The Temperature Sensitive Stream, 1977, until revised.	

1/ This does not include isolated activities which are minor, lacking in measurable impact and of insufficient import to cause objection by any Forest Service constituency.

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
b. Localized management and protection prescriptions that are based upon the characteristics and sensitivities of the area and which will meet management goal will be developed by the IDT process. Input used by the IDT will include evaluation of present and potential spawnings and rearing habitat for anadromous and resident fish of the main stream or lake and all tributaries. Unless other measures are specified by the IDT process, the prescriptions for all FHMU will include the following: (1) All trees within crown height of a fish stream will be felled away from the stream except those which cannot be felled away from the stream for safety reasons and which are marked on the ground by a sale administrator. Any tree felled into or across a fish stream must be removed within 48 hours. Within areas designated for cutting, felled or windfallen trees must be bucked and limbed clear of the streamcourse debris entering the stream. (2) Significant quantities of limbs, branches, bark, sediment and other identifiable logging debris will be removed from fish streams and areas subject to flooding to a point above the high water mark within 48 hours after such debris is deposited. (3) Streambank brush, grass and trees not designated for cutting will be protected to provide bank stability, shade and terrestrial insect habitat. (4) All logs will be fully suspended when yarding across any designated fish stream. Fish streams will be identified on the project.	Omitted	Referred to Forest planning

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
(5) Temperature-sensitive streams will be identified, recognizing State water quality standards pertaining to fish habitat. Such streams will require special restrictions on canopy removal, including: (a) A percentage limit of stream-side overstory/canopy which may be removed in the initial entry. (b) An amount of brush and understory, including scrub trees, that will be left standing and not damaged to the extent their shade-producing capability is materially affected. (c) Spaces between openings (described by size and shape) and areas which will not be cut (described by width and length and cardinal direction).	Omitted	Referred to Forest planning
(6) Location of roads within an FHMU, parallel to fish streams and crossing fish streams will be permitted only where other locations are not feasible and the management goal for fish habitat can be met. Where roads are located near fish streams, introduction of sediment must be avoided; sidecasting and waste materials must not encroach upon the streamcourse; and as much undisturbed ground cover as possible shall be left between the road and the stream. Complete endhaul of waste material will be required where roads are located near fish streams when there is the probabilty of downhill movement of this material into the stream below. Fill will be placed into fish streams only when considered through the IDT process to be the best alternative. Fish passage must be assured at all locations where roads cross fish streams. Prescriptions will specify permissible uses of heavy machinery and		

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
	b. Monitoring results will document habitat and abundance trends of management indicator species and provide a basis to recommend changes. 7. Goals, objectives, and monitoring requirements will be established for management indicator species: Describe in Forest plans the anticipated effect on the fisheries resource; the management indicator species selected for management and monitoring purposes; the reasons for selecting the indicator species; the monitoring schedule; and the expected precision and accuracy of the monitoring process. Utilize the following criteria to select management indicator species, keeping in mind the need to restrict species to a practicable number: a. Threatened or endangered species on Federal lists are selceted as management indicator species; b. Species identified in State lists of endangered or threatened species or in public issues or management concerns; c. Species for which there is considerable concern due to other pertinent laws or policies; d. Species with which there are current and/or anticipated conflicts, concerns or issues relative to habitat requirements and other resource management activities; e. Species for which resource use allocations and subsequent management practices could significantly impact habitat management options; f. Species which represent or reflect environmental suitability for other species (true ecological indicator species);	
9. The Forest Service will insure that land use activities in or affecting Fish Habitat Management Units are carried out in full compliance with applicable plans and policies. Policies will be stipulated in appropriate contracts. Where significant violations or instances of damage or unforeseen problems occur, whether reported by Forest Service personnel or other agencies or individuals, the following remedial steps will be taken: a. All agencies having responsibilities in the area of concern will be immediately informed by the Forest Supervisor that a problem situation has arisen. Specialists and other individuals with expertise applicable to the problem will also be contacted as soon as possible and brought to the scene if they may be of assistance. b. If the situation arises in conjunction with a contracted or permitted activity, appropriate officers or individuals will be instructed to take immediate remedial action within the full limits of the contract or permit to protect the environment, to repair any damage, and to prevent any further recurrence. If it appears that the problem has arisen from a misassessment of the physical characteristics of the area, operations in the area will be suspended until an investigation by specialists is conducted. The Forest Supervisor shall require that the contractor or permittee inform him of remedial measures which are within their capability and the time required to bring them into operation.		9 Omitted - Referred to Forest planning

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
(7) The use of intertidal gravel as a source of borrow shall not be allowed in areas where pink and chum salmon spawn.	Omitted	Referred to Forest planning
(8) Blasting that adversely affects fish spawning beds will be limited to times when eggs and alevins are not vulnerable. Safe times and distances will be determined on a site-by-site basis in conjunction with the Alaska Department of Fish and Game, National Marine Fisheries Service and U.S. Fish and Game Wildlife Service.		
(9) Streamcourses may not be changed or diverted without written approval from the Forest Supervisor, who shall issue such approval after consultation with Alaska Department of Fish and Game, National Marine Fisheries Service and U.S. Fish and Wildlife Service and where it is clear that habitat impairment will not result.		
(10) A plan and time schedule for falling and yarding timber within any FHMU will be developed and approved by the Forest Service and delivered to the operator before that unit is released for cutting.		
(11) Where the IDT process determines that soil conditions, water temperatures, logistical problems or other factors are such that an activity cannot be carried out in conformance with the goals and policies of the Soil, Water and Fish Accounts of the Guide, those activities will not be permitted.		
8. The Forest Service will coordinate with State and Federal agencies in maintaining a continuous program for detailed research, monitoring and asessment of the impacts of land use activities on fish habitat. Research results will be utilized to refine management plans, determine their relative success and to modify forest management practices where necessary to insure that management goals are met.	6. Coordinate with State and Federal agencies in maintaining a continuous program for detailed research, monitoring and assessment of the impacts of land use activities on fish habitat. a. Conduct monitoring programs to determine the implementation effects of Forest Plan standards and guidelines on fish. habitat.	Added material reflecting requirements of National Forest Management Act

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
Concurrently, the Forest Service will undertake all measures which are within the capability of the contractee. c. In the event the contractee or permittee fails to take corrective measures within its contract or permit responsibility, the Forest Service shall terminate operations in the area until there is compliance. d. Where available as a remedy, restitution for impairment of habitat productivity will be sought in cooperation with other State and Federal agencies. e. Corrective measures shall be undertaken in consultation with a group of experts convened by the Forest Supervisor from the Forest Service and other State and Federal agencies. Once resolution of the problem has been accomplished, the groups will meet with the U.S. Forest Service staff to determine if additional policies and prescriptions need to be written for preventing recurrences, to identify the cause, and to refine procedures for dealing with such situatons. f. The Forest Supervisor shall develop and maintain a standard contingency plan for dealing with damage situations involving fish habitat. g. All actions by the Forest Service shall insure that the fish habitat is returned to its previous condition as soon as possible. In the event of damage, a long-term plan for restoration and prevention of further or recurrent damage shall be developed if there is any potentiality for prolonged or recurring damage. h. The Forest Service will undertake modification of timber sale and other contract and permit provisions to make available an optimum range of authorities and remedies for dealing with instances of fish habitat damage.	g. Species having significant economic value. Normally these species are those commonly commercial or sport fished.	

AQUACULTURE

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
1. Permit applications for aquaculture sites will first be received by the Alaska Department of Fish and Game.	1. Receive permit applications for aquaculture sites from the Alaska Department of Fish and Game.	Clarification
2. The Forest Service will consider, in cooperation with the Alaska Department of Fish and Game, land suitable for aquaculture sites. Site availability will depend on the results of land management planning and environmental analysis to determine the compatibility of such sites with other resource and value priorities. Any further site selections or additional criteria will be identified in the Tongass Forest Land Management Plan.	2. Consider, in cooperation with the Alaska Department of Fish and Game and the Regional Aquaculture Associations land suitable for aquaculture sites. Site availability will depend on the results of land management planning, and environmental analysis.	Clarification
	3. Conduct aquaculture activities on the Forests under the Memoranda of Understanding supplemental to the three-way Memorandum of Understanding between the Forest Service, Alaska Department of Fish and Game, and the Regional Aquaculture Association.	Clarification of Area Guide Policy 2

WILDLIFE

Area Guide Policies	Regional Plan Policies	Reason for Change/Refere
1. Policies 1 through 5 in the Section on Fish will apply also to wildlife resources.	1. Fully coordinate with other agencies involved with the wildlife resource. 2. Solve mutual problems and achieve common goals through the Master Memorandum of Understanding between the Forest Service and the Alaska Department of Fish and Game. 3. The Forest Service recognizes wildlife resources as a major component of the National Forests and the source of numerous important products, benefits and services. Give wildlife habitat management needs equal consideration with other resources in all Forest Service programs.	Clarification
2. Procedures and concepts with respect to the Sikes Act and memoranda of understanding will be the same as prescribed in regard to the Fish account as set forth in this Guide.	4. Coordinate wildlife habitat surveys, studies, plans and improvement projects with the Alaska Department of Fish and Game. Use the authorities for cooperative work under the Sikes Act.	Clarification
3. Desirable levels of wildlife will be determined primarily by the Alaska Department of Fish and Game and wildlife habitat will be determined primarily by the Forest Service, using factors such as land capability, other resource values, demand, relative abundance, competition with other species and coordination with other resources and needs.	5. The Alaska Department of Fish and Game and the Forest Service should jointly establish population objectives for wildlife and identify the amount and quality of habitat needed to sustain the desired population objectives.	Clarification
4. The Forest Service will emphasize management for indigenous wildlife species and natural habitat over other wildlife management approaches, except in cases where the Forest Service and the Alaska Department of Fish and Game agree upon desirable alternatives.	6. Emphasize management for indigenous wildlife species and natural habitat over other wildlife management approaches, except in cases where the Forest Service and the Alaska Department of Fish and Game agree upon other alternatives. Give special consideration to the habitat of sensitive, threatened and endangered species of plants, animals and fish. Provide, as needed, for the identification, habitat management and protection of these species.	Clarification

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
5. The Forest Service designates as wildlife habitat, areas of land and water necessary for the maintenance of wildlife populations at the desirable levels established in Policy 3.	Omitted	Referred to Forest Planning
6. Unless otherwise indicated, determinations necessitated by the policies in this section will be undertaken through the inter-disciplinary team (IDT) process in full accordance with the policies and procedures for IDT's set forth in this Guide. a. Land Management Plan Phase (1) An IDT will assist in land allocation decisions by providing sufficient information to permit allocations which recognize the capabilities and sensitivities of important wildlife habitat areas. Of special importance will be identification of areas which warrant designation as LUD I, II or III because of their relatively high vulnerability to development impacts on productive capacity, associated recreational opportunities or other factors. (2) In addition, the Forest Service recognizes that, for many wildlife species, information on the impacts of land use activities on habitat and on factors determining the suitability of habitat for wildlife are incomplete. During the development of the land management plan, the Forest Service will identify jointly with the Alaska Department of Fish and Game those species for shich land use activities should proceed with caution. (3) The Forest Service recognizes the importance of wildlife habitat, and timber harvesting will be planned to protect or enhance that habitat. Habitat guides, which could protect or enhance the various species, will be jointly developed by the Forest	7. Implement policies through the interdisciplinary team process: a. Recognize the capabilities and sensitivities of important wildlife habitat areas in land allocation. b. The Forest Service recognizes that, for many wildlife species, information on the impacts of land use activities on habitat and on factors determining the suitability of habitat for wildlife are incomplete. Identify these species jointly with the Alaska Department of Fish and Game. c. Provide the habitat management standards necessary to insure that viable population levels of all wildlife and fish on the Forests are maintained over time despite normal fluctuations in population numbers. d. Habitat management standards for indicator species are, as appropriate, aimed at supporting populations above the viable population level. e. The Forest Service recognizes the possibility that alteration of wildlife habitat through a series of projects over an entire range of a species may result in cummulative impacts.	Clarification; details referred to Forest planning

programs to be carried out con-current with land use activities to supply the necessary data and information on the relationship between such activities and habitat requirements.

(4) The Forest Service further recognizes the possibility that alteration of wildlife habitat through a series of projects over an entire range of a species may result in cummulative or collective adverse impacts on that species which escape notice during, or cannot be adequately dealt with through, individual implementation plans. An IDT will provide assistance during the allocation phase to insure that this possibility is adequately protected against.

b. At the prescriptive and implementation planning levels, the IDT will be utilized as described in the suceeding policies.

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7. All proposals for land use (e.g., logging, hydroelectric projects, developed recreation facilities or transportation corridors proposed by other agencies) 1/ will require the completion of a prescriptive or implementation plan, with the participation of an IDT. The plan will specify: (1) appropriate Wildlife Habitat Management Units (WHMU) and (2) prescriptions necessary to meet the goals for wildlife habitat set forth in this section of the Guide. Mineral development activities require an operating plan that also involves THE IDT process. a. The WMHU will consist of all components of wildlife habitat meeting the definition in Policy 5 as identified by the IDT process. Other land use activities will not be excluded from WMHU's provided they are consistent with the management goals for wildlife habitat.	Omitted	Referred to Forest Planning

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1/ This does not include isolated activities which are minor, lacking in measurable impact and of insufficient import to cause objection by any Forest Service

b. The IDT process will also develop localized management and protection prescriptions based upon the charactersitics and sensitivities of the area. Participation in prescription development will be invited from the Alaska Department of Fish and Game, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. The prescriptions will provide for protection and enhancement of sufficient winter and summer range, browse and food sources, protective cover and migration corridors, nesting, feeding and resting sites. Other requirements necessary to meet the management goal for wildlife habitat will be met over the long run in view of relationships between logging and other land use activities and wildlife habitat needs. The prescriptions will also address the relative need to preserve mature and old growth forests; to insure sufficient browse reproduction in second growth stands; to avoid population decreases below pre-determined levels as a result of displacement during forest development; to recalculate rotation periods or other silvicultural practices based on wildlife habitat needs; and to specify the percentage of an area to be cut during a given entry.	Omitted	Referred to Forest planning
c. The prescriptions for all WHMU will include the following unless more restrictive measures are prescribed by the IDT process: (1) Wildlife habitat requirements can be partially met through the size, shape, location and dispersal of cutting units, areas retained in natural conditions, silivicultural systems, and multiple entry harvesting. (2) Identification of existing or potential opportunities for viewing and photography. (3) Provision for insuring that a maximum number of snags are retained for wildlife use consistent with the objectives for	Omitted	Referred to Forest planning

(4) Tracked vehicle and truck operations within waterfowl habitat, where permitted, shall be confined to constructed roads except in the case of beach salvage operations. Such activities shall be situated behind a timber screen where possible.		
8. Specific developments and activities such as log transfer points, ferry terminals and camps should be located outside WHMU's where desirable. If the IDT process determines, they may be permitted within an WHMU without contravening management goals, they should be placed in areas where the least disturbance or interference with wildlife will result. Specific protective measures shall be developed by the IDT process for each development and activity.	Omitted	Referred to Forest Planning
9. The National significance of the bald eagle dictates that its habitat will continue to be given special protection through specific Forest Service management measures developed in conjunction with the Fish and Wildlife Service. These include: a. Maintaining the desired quality and quantity of eagle habitat, nest trees and perch trees. b. Assisting the Fish and Wildlife Service in conducting surveys and studies. c. Establishing an undisturbed wildlife habitat zone of 100 m (330 ft.) or more in radius around each eagle nest tree prior to any forest development activity in the vicinity. Local topography, timber type, windfirmness and other factors will determine the exact boundaries.	8. The National significance of the bald eagle and its habitat necessitates special protection through specific Forest Service management measures developed in conjunction with the U.S. Fish and Wildlife Service. These include: a. Maintaining quality and quantity of eagle habitat, nest trees and perch trees; b. Assisting the Fish and Wildlife Service in conducting surveys and studies; c. Establishing an undisturbed wildlife habitat zone of 100 meters (330 feet) or more or more in radius around each eagle nest tree prior to any forest development activity in the vicinity.	Clarification
d. The Forest Service, the Fish and Wildlife Service and the Alaska Depart- ment of Fish and Game will review the existing policies for bald eagle protection to determine their adequacy and any new measures necessary to carry out the provisions of the Act by the time the	Omitted	Content included in previous policies.

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
10. Users of National Forest lands will be advised of the potential dangers of bear-human confrontations. Procedures for the disposal of garbage and other attractive nuisances at developed areas will be formulated in detail and strictly enforced by Forest Service administrators. Logging camps and other developed sites are to be located away from areas of substantial bear density (including areas around salmon streams frequented by bears) to reduce changes of bear-human confrontations	Omitted	Referred to Forest Planning
11. The Forest Service will maintain a continuous program for monitoring and assessment of the impacts of land use activities on wildlife in cooperation with appropriate State and Federal agencies in accordance with their areas of interest and expertise.	9. Goals, objectives, and monitoring requirements will be established for management indicator species. Describe in Forest plans the anticipated effect on the wildlife resource; the management indicator species selected for management and monitoring purposes; the reasons for selecting the indicator species; the monitoring schedule; and the expected precision and accuracy of the monitoring process. Utitlize the following criteria to select management indicator species, keeping in mind the need to restrict species to a practicable number: a. Threatened or endangered species on Federal lists are selected as management indicator species; b. Species identified in State lists of endangered or threatened species or in public issues or management concerns; c. Species for which there is considerable concern due to other pertinent laws or policies; d. Species with which there are current and/or anticipated conflicts, concerns or issues relative to habitat requirements and other resource management	National Forest Management Act

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
	e. Species for which the planning area comprises a majority of the species total state-wide, regional, or national habitat; f. Species for which resource use allocations and subsequent management practices could significantly impact habitat managment options; g. Species which represent or reflect environmental suitability for other species (true ecological indicator species); h. Species having significant economic value. Normally these species are those commonly hunted, fished, or trapped and those for which there is relatively high demand (consumptive and noncomsumptive). Address plant and animal diversity needs as part of the planning process. Establish habitat quality, quantity and distribution standards for management indicator species in Forest plans.	
12. Where violations of contracts or permits or instances of damage or unforeseen problems occur, the policies and procedures set forth in Policy 9 in the Fish Account will apply.	Omitted	Referred to Forest Planning

1 The policy on consultation and cooperation with the Alaska Department of Fish and Game, the National Marine Fisheries Service and the U.S. Fish and Wildlife Service is the same as that prescribed for in the Fisheries Account of the Guide. However, in areas where other State and Federal agencies have overlapping resource management responsibilities (e.g., estuaries), the Forest Service will seek guidance and direction from those agencies, including the Alaska Department of Fish and Game, Alaska Department of Environmetal Conservation, Corps of Engineers, National Marine Fisheries, U.S. Fish and Wildlife Service and others, and will execute plans and decisions in a manner consistent with the statutory responsibilities of these agencies.	1. Coordinate the planning and decisionmaking process with the Alaska Department of Fish and Game, the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service In areas where agencies have overlapping resource management responsibilities, seek guidance and direction, and execute plans and decisions in a manner consistent with the statutory responsibilities of these agencies.	Clarification
2. Management decisions on activities within estuaries and wetlands that affect fish and wildlife habitat will be governed by the policies and procedures on Fish and Wildlife set forth in this Guide, provided, however, that the ecological role of intertidal and marine areas supporting fish, shellfish and wildlife populations will be fully recognized in calculating fish and wildlife habitat needs on National Forest land.	2. Rocognize the ecological role of intertidal and marine areas in supporting fish, shellfish and wildlife populations in management decisions affecting habitat.	Clarification

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
3. Unless otherwise indicated, determinations necessitated by the policies in this section will be made through the interdisciplinary (IDT) process in full accordance with the policies and procedures for IDT's set forth in this Guide. Where proposed activities involve estuaries and wetlands, the IDT process must be structured and implemented in a manner which insures that the management goal for estuaries and wetlands will be met. The IDT process will be employed during all phases of the planning process. a. An inventory of important estuarine and wetland areas will be made at the allocation level in cooperation with the Alaska Department of Fish and Game, National Marine Fisheries Service and the U.S. Fish and Wildlife Service and other agencies. Of special importance will be identification of areas which warrant designation as LUD I, II or III because of their relatively high vulnerability to developmental impacts. Plans for managing individual estuaries and wetlands will be prepared at the implementation level. Included in these plans will be an evaluation of all factors influencing fish and wildlife habitat as well as other natural factors and values as they may be impacted by various land use activities. Because ease of access and other characteristics make estuaries and wetlands popular locations for various activities and developments that may substantially alter these areas, policies on the appropriateness of such activities and developments will also be determined at this time. Policies will be sufficient to meet the management goal. b. During the implementation phase, the IDT process will be utilized as described in the succeeding policies.	3. Make determinations through an interdisciplinary process.	Clarification - a and b referred to Forest Planning

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
4. All proposals for use (e.g., mining, logging, aquaculture, hydroelectric projects, developed recreation facilities) will require the completion of an IDT plan. This plan will specify (1) appropriate Estuary and/or Wetland Management Units (E/WMUs) and (2) formulation of prescriptions necessary to meet the goal for Estuaries and Wetlands set forth in this section of the Guide.	4. Prepare an interdisciplinary plan for all proposals for use (e.g., mining, logging, aquaculture, hydroelectric projects, developed recreation facilities) In this plan specify (1) appropriate Estuary Management Units (EMU's); and (2) formulation of prescriptions.	Clarification; details referred to Forest planning
(This does not include isolated activities which are minor, lacking in measurable impact and of insufficient import to cause objection by any Forest Service Constituency.)	(This does not include activities that are minor, lacking in measurable impact and of insufficient impact to cause objection by any Forest Service Constituency.)	
a. An E/WMU will consist of all components of an estuary or wetland together with adjacent areas determined by the IDT process to be necessary for implementing management prescriptions that meet the management goal. An E/WMU will not exclude management activities provided they are consistent with the management goal for estuaries and wetlands.	An EMU includes components of an estuary and adjacent areas determined to be necessary for implementing management prescriptions. An EMU will not exclude management activities consistent with the goals for estuaries.	
b. Localized management and protection prescriptions that are based upon the characteristics and sensitivities of the area and which will meet management goals will be developed by the IDT process. Input used by the IDT will include all factors necessary with respect to establishment of Fish Habitat Management Units and Wildlife Habitat Management Units therein, together with recreational and other human usage patterns. In instances where State tidelands and submerged lands are involved, land use activities by private operators are approved by the State and/or Corps of Engineers through the permit or lease process; prescriptions will provide that any application for a permit or lease must cover all proposed activities. All prescriptions relating to activities on estuaries and wetlands will include the measures prescribed below, unless more		

(1) Unavoidable activities that may have a disturbing or disrupting influence on fish and wildlife species or habitat during critical life history periods (e.g., nesting and feeding) will be scheduled for time periods when such influences will be minimal or nonexistent. Such times will be determined prior to the proposed activity in cooperation with the Alaska Department of Fish and Game and other agencies.	Omitted	Referred to Forest planning
(2) Forest development activities within or adjacent to estuaries and wetlands will be avoided unless determined by the IDT process to be consistent with management goals. Permanent road systems may, through the planning process, incorporate provisions for user and scenic turnouts. Where roads or other facilities are approved for location near estuaries, fills, sidecasting and waste materials, they must not encroach upon such areas unless recommended during the interdisciplinary process. As much undisturbed ground and cover as possible must be left between the activity or facility and the estuary to reduce or eliminate disturbance of fish, wildlife, or recreational values. The use of intertidal areas as a source of borrow will be limited to those areas and methods stipulated as being compatible with the character of the area and where the borrow source can be returned to a natural appearance subsequent to use.		
(3) Forest development activities on grass flats and tide flats will be limited to those areas specifically selected during the interdisciplinary process and approved by the Forest Supervisor as being compatible with the character of the area and of minimal impact.		
(4) A distance separating camps, cabins, and other structures from tidal flats used by aquatic and terrestrial life forms for feeding, nesting, or resting sufficient to avoid significant interference will be established. Structures shall be located [illegible]		

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
(5) Roads, buildings and all other facilities and operations not requiring direct water access will normally be located behind a zone of windfirm timber. However, the IDT may recommend otherwise if the character of the area would not be significantly impaired.	Omitted	Referred to Forest planning
(6) With respect to general types of developments (docks, landings, floats, boat ramps) requiring water access, the following are intended as selection criteria during the IDT process regarding the choice of sites:		
(a) Minimum distances between the sites and the mouths of intertidal channels of known anadromous fish streams sufficient to avoid significant interference will be established by the IDT process.		
(b) Minimum distances between the sites and tide flats or subtidal beds of aquatic vegetation will be specified during the IDT process to avoid significant impairment.		
(c) The filling of intertidal and subtidal areas will be restricted to those sites having the least value as habitat for marine organisms and vegetation.		
(d) Areas with established uses such as commercial and sport fishing, hunting and anchorages for commercial and recreational vessels will be avoided unless the IDT process determines that location of sites may be accomplished in a manner that is compatible with such uses.		

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
(7) The following are intended as selection criteria to assist the IDT process in the choice of locations for log transfer and storage sites in estuarine areas. (a) The number of active log transfer sites and storage areas in any given bay or bay complex will be minimized by selecting locations that will accommodate future logging without requiring additional transfer or storage sites. (b) The steepest submerged lands having the least productive intertidal and subtidal zones will be considered first during site selection. Slopes of 40 percent or more are desirable. (c) Log transfer sites along straits, channels and the shores of deep bays where currents may aid in dispersing debris will be considered first during site selection. (d) Rafting and log storage areas will be in the deepest water possible with a minimum depth of 13 meters (40 feet) at mean lower low water. Further, logs or rafts must not be allowed to ground at any tide stage if there is a possibility of damage to bottom organisms. Timber purchasers should be encouraged to transport stored logs to their final destination as quickly as possible to reduce impacts associated with long term storage in estuarine waters. (e) Sites in deep bays rather than in shallow bays should be considered first; bays without sills or other natural restrictions to tidal exchange should be selected. Log transfer sites should be located near the mouths of bays rather than at the heads of bays unless the environment at the mouth of the bay is of special significance.	Omitted	Referred to Forest planning

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
(f) With respect to any permit application to the Corps of Engineers for a log rafting or storage or transfer site, the Forest Service will provide its expertise on specific or alternative sites.	Omitted	Referred to Forest planning
5. a. The use of existing log storage and transfer sites not complying with the policies outlined in the Guide will be phased out. Termination of site use will coincide with current contract expiration or, in the case of long term sales, at the beginning of the next subsequent five-year rate redetermination period. Alternative sites will be provided in accordance with the Guide.	5. Phase out the use of existing log storage and transfer sites not complying with these policies. Coordinate termination of site use with alternative sites.	Clarification; details referred to Forest planning
b. Where a nonconforming site and/or facility is considered for use during a subsequent contract or five-year operation period, an IDT study will be made to determine whether adverse impacts of relocating the nonconforming site exceed those resulting from continued use of the existing site. If the adverse impact of relocating a needed facility is judged to exceed that occurring at its present location, the facility will be allowed to remain in use unless the study indicates that management goals will not be met. In such cases, no further use of the facility will be allowed and an alternative site will be provided in accordance with Guide procedures.	6. Where a nonconforming site and/or facility is considered for use during a subsequent contract or five-year operation period, use an interdisciplinary process to determine whether adverse impacts of relocating the nonconforming site exceed those resulting from continued use of the existing site.	
6. The policies and procedures with respect to violations and instances of damage in the Fish and Wildlife Accounts in this Guide will be applicable to estuaries and wetlands as well. Application of such policies and procedures will include instances of damage to recreational and aesthetic values as well as to fish and wildlife habitat.	Omitted	

Area Guide Policies	Regional Plan Policies	Reasons for Change/Reference
1. Require utilization and optimum practical use of wood material both in the woods and at the mill. Promote the use of wood for its highest value product commensurate with present and anticipated supply and demand. Improvements in utilization will be made through sale preparation, appraisals, contract administration and dissemination of research information. Sale and utilization of dead, blown-down and other deteriorating timber will receive high priority.	1. Require utilization and optimum practical use of wood material. Promote the use of wood for its highest value product commensurate with present and anticipated supply and demand. Improvements in utilization will be made through sale preparation, appraisals, contract administration and dissemination of research information. Sale and utilization of dead, blown-down and other deteriorating timber will receive high priority. Detailed refinements of wood utilization policy are contained in Plan Chapter V, Timber Element.	Clarification; See Preferred Alternative in EIS - Utilization Stamdards
2. Timber will be taken from National Forest System lands only where: a. soil, slope or other watershed conditions will not be irreversibly damaged. b. there is assurance that such lands can be adequately restocked within five years after cutting. c. protection is provided for streams. streambanks, shorelines, lakes, wetlands and other bodies of water from detrimental changes in water temperatures, blockages of water courses and deposits of sediment where logging is likely to seriously and adversely affect water conditions and fish habitat. d. the logging methods used are not selected primarily because they will give the greatest dollar return or the greatest unit output of timber.	Omitted	Area Guide policy replaced by NFMA regulations: details referred to Forest planning for update consistent with NFMA regulations. NFMA regulations.

3. Clearcutting and other cuts designed to regenerate an even-aged stand of timber will be used as a cutting method only where:	3. Even-aged management is the prescribed silvicultural system for all species except where uneven-aged management is needed to meet other resource objectives. Clearcutting to regenerate an even-aged stand will be used as a cutting method only where such practice is determined to be optimum to meet the objectives and requirements of the Forest land management plan, and can be carried out in a manner consistent with the interdisciplinary process for the protection of soil, water, fish and wildlife, recreation, visual resources, and the regeneration of the timber resource. Management prespriptions will not be chosen primarily because they will yield the greatest dollar return or the greatest amount of timber, although these factors will be considered. Detailed refinement of silvicultural standards, guidelines, and regeneration cutting methods are contained in Regional Plan, Chapter V, Timber Element.	NFMA Regulation 36 CFR 219.10(d)(1). Prescribe according to geographic areas, Forest types or other suitable classifications, appropriate systems of silviculture to be used within the Region. See Preferred Alternative in EIS - Appropriate Systems of Silviculture
a. for clearcutting, it is determined to be the optimum, and for other such cuts, it is determined to be appropriate to meet the objectives and requirements of the relevent land management plan.		
b. the interdisciplinary review has been completed and the potential environmental, biological, aesthetic, engineering and economic impacts on each sale to be advertised have been assessed, as well as the consistency of the sale with the multiple-use of the general area.	b. Omitted	Area Guide Policy replaced by NFMA Regulations
c. cutting blocks, patches, or strips are shaped and blended to the extent pracicable with the natural terrain.	c. Omitted	Area Guide Policy replaced by NFMA Regulations. See EIS - Dispersal and Size Variation of Tree Openings
d. there is established a maximum size limit of 160 acres to be cut at one place and time. The established limit may be exceeded only after appropriate public notice and review by the responsible Forest Service officer one level above the Forest Service officer who normally would approve the harvest proposal. Such limits will not apply to the size of areas cut as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm.	d. NFMA Regulations provide that 100 acres is the maximum size limit of created openings to be allowed for the hemlock-Sitka spruce forest type of coastal Alaska unless excepted under specific conditions. Although the Regulations speak only of the hemlock-Sitka spruce type of coastal Alaska, the more pure stands of both species, the cedar type, the Chugach white spruce, and coastal hardwoods type will also be governed by the 100-acre limit.	NFMA Regulation 36 CFR 219.10(d)(2) prescribe the maximum size of tree openings created by the application of even-aged management. See Preferred Alternative in EIS - Maximum Size of Created Openings

	Detailed refinements of size - limitation policies on created forest openings are contained in Chapter V, Timber Element	
e. clearcuts will be carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation and aesthetic resources and the regeneration of the timber resource.	e. Omitted	Referred to Forest Planning
f. stands designated for clearcutting will have generally reached the culmination of mean annual increment of growth.	f. The final harvest of even-aged stands will not be scheduled until the stand approaches culmination of mean annual increments (CMAI) of growth. CMAI, in the management of even-aged stands, will be indicated by the average age of the stand based on cubic foot volume.	NFMA Regulation 36 CFR 219.10(d)(7) Requires a unit of measure for expressing mean annual increment. See Preferred Alternative in EIS.
g. cutting units are located so timber stands can be logged without creating inoperable areas or creating areas where future logging will destroy needed regeneration established after an earlier removal. Unit spacing and subsequent entries will be done on the basis of total are planning by compartment.	g. Clearcutting and other cuts designed to regenerate an even-aged stand of timber will be used as a cutting method only where cutting units are located so timber stands can be logged without creating islands of timber that cannot be economically harvested in the future or creating areas where future logging will destroy regeneration established following an eariler regeneration cutting.	Clarification, delete requirements addressed by NFMA. See Preferred Alternative in EIS - Appropriate Silvicultural Systems
4. Timber will usually be cut on the following schedule of priorities: deteriorating stands, incompletely stocked stands and large stands being managed for age class diversity. Generally, sites in each category having the highest potential productivity should be cut first.	4. Harvest scheduling will consider priorities for: deteriorating stands, incompletely stocked stands and stands which have achieved their productive potential. Scheduling will also consider the goals and objectives of the Forest plan and the most efficient way of achieving them.	Clarification; See Preferred Alternative in EIS - Dispersal and Size Variation of Tree Openings
5. Sale layouts will include provisions for the protection and enhancement of fish and wildlife resources and habitat as described elsewhere in the Guide.	Omitted	Area Guide Policy contained in Policy #16, with refinements in Plan Chapter V, Timber Element
6. Sale layouts, where feasible, will	6 Sale layouts must include a	Clarification

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
7. The most efficient timber harvesting and extraction systems will be utilized, consistent with prescriptions and policies for other resources. Systems will not be selected primarily because they give the greatest dollar return or the greatest unit output of timber.	Omitted	NFMA language incorporated in Policy #3.
8. The Forest Service will continue the program to salvage beach logs in cooperation with the State of Alaska.	8 The Forest Service will continue the program to salvage beach logs in cooperation with the State of Alaska.	No Change
9. Artificial reforestation and timber stand improvement projects having benefits to other resources shall receive priority over those benefiting only one resource. Examples would be precommercial thinning in winter deer range and reforestation of areas having scenic value.	9 Schedule artificial reforestation and timber stand improvement projects having benefits to other resources before those benefiting only one resource. Examples would be precommercial thinning in winter deer range and reforestation of areas having scenic value.	Clarification; See Preferred Alternative in EIS - Management Intensity.
10. Seeding or planting shall be used to reforest areas on which natural regeneration has not occurred within four years or where accelerated regeneration is desired. Genetically improved seed or trees will be used as they become available.	10. Seeding or planting shall be used to reforest areas on which natural regeneration has not occurred or where accelerated regeneration is desired. Genetically improved seed trees will be used as they become available. Examine all National Forest lands treated after the first and third growing seasons. This requirement will be handled in the following way: a. examine artificial seeding or planting treatments one and three years after treatment. b. Conduct timber stand improvement project surveys as part of project inspection or within one year of completion. For most projects, no third year examination will be completed.	NFMA Regulation 36 CFR 219.13(h)(3) Providing that when trees are cut to achieve timber production objectives, cuttings will be made in such a way as to assure that stands can be adequately restocked within five years after final harvest. See Preferred Alternative in EIS - Management Intensity.

	c. No first year surveys are required if the silvicultural prescription anticipates natural regeneration. d. Stands will be certified as stocked of the third year survey indicates that the area meets stocking standards. e. Schedule another survey not later than seven growing seasons after harvest if the third year survey indicates the area is very likely to be stocked but more time is required to make this determination. f. Prescribe artificial regeneration if the third year survey indicates that natural regeneration is highly unlikely.	
11. Forest fertilization shall be tested, utilizing research or administrative studies of the soils and the climatic and topographic conditions of the site, prior to being used on an operational basis.	11. Forest fertilization may be used on soils determined to have insufficient nutrient status to allow the successful establishment of a conifer cover within the time constraints imposed.	Clarification; See Preferred Alternative in EIS - Management Intensity
12. Frequency of timber sale inspection will be determined by the complexity of the timber sale and operator performance with the objective being to insure full contract compliance.	12. Frequency of timber sale inspection will be determined by the complexity of the timber sale and operator performance with the objective being to insure full contract compliance.	No Change
13. Where compatible with environmental protection objectives, private enterprise will be encouraged to utilize timber resources. The Forest Service will plan sale offerings to encourage competitive bidding and in a range of sizes and species that provides opportunities for small business enterprises. A fair share of timber will be set aside for small business operators.	13. Private enterprise will be encouraged to utilize timber resources. The Forest Service will plan sale offerings to encourage competitive bidding in a range of sizes and species that provide opportunities for small business enterprises.	Clarification

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
14. Special attention will be given to logging practices that encourage diversity of wildlife habitat, for example, small clearcuts and other silvicultural techniques may be used to increase browse production in key winter habitat.	Omitted	See Preferred Alternative in EIS - Appropriate Systems of Silviculture
15. Throughout the life of each project, an IDT will monitor the project area and operation to assess the impacts of all management activities. The IDT will evaluate the adequacy of the management measures taken and will recommend improvements or changes to be incorporated in planning future activities.	15. Each project will be monitored to evaluate the adequacy of management practices. Information collected in this process will be used to recommend improvements or changes in the planning of future activities.	Clarification
No Area Guide Policy	16. When openings are created in the forest by the application of even-aged silviculture, the openings will be shaped and blended with the natural terrain to achieve aesthetic and wildlife habitat objectives to the extent practicable. Openings will be located to achieve the desired combination of multiple objectives. Distribution of openings over time will conform to a total compartment multi-entry layout plan and be scheduled taking into consideration the assumptions used in the analytical allocation model. Multi-entry layout plan must consider all the National Forest land involved. Assumptions used for plan amendments or revisions should review activities already scheduled. Detailed refinements of this policy are displayed in Chapter V Timber Element.	NFMA Regulation 36 CFR 219.10(d)(2) Providing for dispersal and size variation of tree openings created by even-aged management.
No Area Guide Policy	17. Minimum stocking levels will be based on spacing, distribution, and stand management objectives rather than the number of trees per acre in accordance with regeneration stocking guides contained in Forest Service Handbook 2409.26d, Alaska Region, Silvicultural Examination and Prescription Handbook.	NFMA Regulation 36 CFR 219.10(d)(2) defining the state of vegetation that will be reached before a cutover area is no longer considered an opening is discussed in the EIS.

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
	Created openings will be adequately stocked with desirable tree species which are approximately five feet in height on National Forests in coastal Alaska, before the area will no longer be considered an opening for the purposes of limitations on scheduling, locations, and size of additional created openings on National Forest land. The basis for this determination will be the third year silvicultural survey. Forest Supervisors may adjust height/density requirements for specific resource management considerations, e.g., wildlife habitat and/or visual quality, to provide a state of vegetation which meets management prescription objectives.	
No Area Guide Policy	18. Implement new technologies leading to the increased utilization of wood products on the Alaska National Forests. Achieve opportunities to increase timber yields on National Forest lands in Alaska. Continue management practices such as planting, release, and weeding as needed and insect and disease control. Maintain the timber supply from the Tongass National Forest to dependent industry at a rate of four billion five hundred million board feet per decade. Achieve RPA targets on the Tongass National Forest with investments in advanced roading, precommercial thinning, and advanced logging systems layout and development.	NFMA Regulation 36 CFR 219.10(d)(4) defining management intensity to be used in determining harvest levels for the Region is discussed in EIS.
No Area Guide Policy	19. National Forest System lands are considered capable of timber production when the biological growth potential exceeds 20 cubic feet per acre per year partial stem volume (stump height to four inches DIB).	NFMA Regulation 36 CFR 219.10(d)(5) Determining the biological growth potential for determining capability of land for timber production. See Preferred Alternative in EIS - Biological Growth Potential.

Inclusions of forest land of less than the aforementioned growth potential will be harvested when necessary for preparation of logical harvest units. This principle will apply to other minor inclusions of lands classified as unsuitable because of inability to separate them.

The harvesting of lands of less than the aforementioned growth potential for fuelwood is permitted. Occasional sawlog trees will be scattered in these areas. These merchantable sawlogs may be sold as sawlogs when the area is harvested primarily for fuelwood.

The material harvested from lands not capable of growing 20 cubic feet per acre annually is not included in the allowable sale quantity.

MINERALS AND GEOLOGY

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
1. Require prospectors and claimants to comply with Federal and State mining and leasing laws as well as National Forest mining regulations.	1. Usie all practical measures to protect other resources during mining. Prospectors and claimants are required to comply with Federal and State mining and leasing laws as well as National Forest mining regulations.	Clarification
2. Operating plans required under the National Forest mining regulations will receive prompt evaluation through the IDT process and action by appropriate Forest Service personnel.	2. Promptly evaluate and take appropriate action on operating plans required under the National Forest mining regulations.	Clarification
3. An environmental analysis report will be prepared using the IDT process for proposed actions where significant impacts on other resources are anticipated.	3. Prepare an environmental assessment for all operating plans.	Clarification
4. Where the environmental analysis indicates significant impacts may occur, an environmental impact statement will precede issuance of permits or the approval of an operating plan.	4. Where the environmental analysis indicates significant impacts may occur, prepare an environmental impact statement to precede issuance of permits or the approval of an operating plan.	No change
5. If significant surface disturbance is anticipated, a reclamation plan will be prepared.	Omitted	Referred to Forest planning
6. Bonds will be required in all cases where significant surface disturbance is anticipated to assure adequate reclamation measures are provided.	5. Require bonds in all cases where significant surface disturbance is anticipated to assure adequate reclamation measures are provided.	No change

Area Guide Policies	Regional Plan Policies	Reason for Change/Referenc
7. The Forest Service assures prospectors and claimants right of ingress and egress granted under the General Mining Law of 1872 and the National Forest mining regulations.	6. The Forest Service assures prospectors and claimants right of ingress and egress granted under the General Mining Law of 1872, the Alaska Lands Act of 1980, and the National Forest mining regulations.	Alaska Lands Act
8. Mineral materials permits will be granted for extraction of sand, gravel and rock when such resources are not reasonably available on private land, and when it is consistent with the land use plan and adequate environmental protection measures can be taken.	7. Grant mineral materials permits for extraction of sand, gravel and rock when such resources are not reasonably available on private land, and when it is consistent with the land use plan, and when adequate environmental protection measures can be taken.	Clarification
9. Where the opportunity exists, and in cooperation with the Alaska Department of Fish and Game, borrow pits will be designed and excavated to facilitate their conversion to salmon rearing ponds.	8. Design and excavate borrow pits to facilitate their conversion to salmon rearing ponds where practicable.	Clarification

RECREATION

Area Guide Policies	Regional Plan Policies	Reason for change/reference
1. Identify, designate and manage the recreational resource of the Tongass National Forest for the greatest public well-being.	1. Identify, designate and manage the recreational resource of the National Forests for the greatest public benefit considering National, as well as, regional and local needs.	Clarification
2. Establish criteria for determining the relative quality of lands capable of providing recreational experiences of the same class (see Appendix for descriptions of recreation classes).	2. Provide a broad spectrum of recreation opportunities in accord with identified needs and demands. Use the Recreation Opportunity Spectrum (ROS) framework to inventory, provide planning input, manage and monitor recreation opportunity. Use recreation improvements to facilitate dispersed recreation.	National Forest Management Act
3. Recreation classes (A and B) that receive high quality ratings will be priority candidates for formal classification during the Tongass management planning process.	3. Use recreation opportunities identified through the Recreation Opportunity Spectrum (ROS) inventory in Forest land management plans. Give primary consideration to those recreation opportunities now being actively utilized by the public for recreation pursuits. Retain other identified opportunities to the extent possible.	Clarification
4. Establish visual quality objectives (see glossary) for the visual resource as part of the IDT process during the prescription phase of planning. These objectives are based upon an inventory and evaluation of the physical characteristics of the landscape, existing use patterns and recreation opportunity demands.	4. Inventory and evaluate the visual resource as an integrated part of the forest planning process addressing both the landscape's visual attractiveness and the public's visual expectation. Assign Adopted Visual Quality Objectives (VQO's) as part of the Forest Land Management Plan to direct management practices for all definitive land areas.	Clarification

Area Guide Policies	Regional Plan Policies	Reason for Change/Referenc
5. Enter into cooperative agreements with the State, local agencies, Native Corporations and other Federal agencies to aid in providing a balanced spectrum of recreational opportunities and developments.	5. Enter into cooperative ventures with the State (i.e., State Comprehensive Outdoor Recreation Plan), local groups, Native Corporations, and other Federal agencies to aid in providing a balanced spectrum of recreation opportunities and to minimize unwarranted duplication of effort.	Clarification
6. Direct private or commercial recreational developments to private lands to the extent possible. Commercial recreational developments will continue to be permitted on National Forest lands where consistent with land management plans, there is a demonstrated public need met and benefit derived from such services and no private lands are available or suitable for development.	6. Direct private or commercial recreational developments to private lands to the extent possible. Continue to permit commercial recreational developments on National Forest lands where they are consistent with land management plans, there is a demonstrated public need met and benefit derived from such services, and no private lands are available or suitable for development.	Clarification
7. Incorporate in the Tongass Land Management Plan proposals for recreational classification that include significant portions of representative vegetative and landform types present in Southeast Alaska.	7. Incorporate in Forest land management plans recreational designations that include portions of representative plant and animal communities.	Clarification
8. Include in the Tongass Land Management Plan proposals for incorporation in the Wild and Scenic River System and National Trails System representative rivers and trails using criteria outlined in the respective Acts.	8. Designate as part of the National Recreation Trail System those land- or water-based trails which have significant recreation values.	Alaska Lands Act
9. Identify and protect areas that possess unusual environmental, educational, recreational, and scientific values so that these special values are available for public study, use or enjoyment. Particular attention will be given to those areas of National or international significance.	9. Identify and protect areas that possess unusual environmental, educational, recreational, and scientific values for public study, use or enjoyment. Give attention to lake and stream systems suitable for backpack, raft/canoe trips, and rivers suitable for extended trips.	Clarification

10. Provide for offroad vehicle use prescriptions at the allocation and prescription planning level.	10. Include offroad vehicle use in Forest land management plans and implemented to minimize adverse effects on the land and resources, promote public safety, and minimize conflicts with other uses of Alaska National Forest lands. Classify areas and trails as to whether this use is permitted in Forest plans. For subsistence purposes, snowmobile, motorboats, and other means of surface transportation are permitted subject to reasonable restrictions necessary to protect fish wildlife, soil, and water.	National Forest Management Act Alaska Lands Act
11. Recognize and protect lands having special values such as boat anchorages, small boat routes, ferry and tour ship routes, recreation beaches, popular deer hunting areas, wildlife observation areas, sport-fishing streams and trails as part of the Tongass land management planning process.	11. Recognize and protect lands having special values such as boat anchorages, small boat routes, ferry and tour ship routes, recreation beaches, popular deer hunting areas, wildlife observation areas, sport-fishing streams and trails as part of the land management planning process.	Clarification
12. Maintain the quality and diversity of recreational experiences and opportunities presently available on the Tongass Forest by proposing a formally designated system of roadless recreational and wilderness areas	12. Maintain the quality and diversity of recreational experiences and opportunities presently available on the Chugach National Forest by proposing a formally designated system of roadless recreational and wilderness areas.	Alaska Lands Act
13. Locate and establish roads and trails necessary to provide reasonable access to recreational attractions and to simple, dispersed campsites where planning indicates this is an objective. Related needs may include anchor buoys or floats and recreation cabins.	13. Promote the design, operation, and maintenance of marine-related facilities. A cooperative effort with others including State and other agencies is required.	Clarification
14. Develop, with public involvement, a priority list of maintenance on improvements.	Omitted	Referred to Forest Planning
15. Use volunteers to the fullest extent possible to increase the level of maintenance.	14. Use volunteers and cooperative manpower programs to the fullest extent possible to increase the level of maintenance.	Clarification
16. Supplement National Forest management activities with interpretive programs and media to enhance understanding of resources, their management and conservation.	15. Use interpretive services to promote energy and economic efficiency and to inform residents and visitors of recreational opportunities within the National Forest System by:	RPA

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
	a. Reviewing and managing existing facilities to insure that only those facilities that can provide quality, energy and economically efficient service are retained or expanded; b. Assisting the public in utilization of safe, enjoyable, energy-efficient recreation opportunities; c. Assisting future management by increasing public understanding of complex issues involved in managing a working forest.	
17. Work with government and private interests to develop specific means and programs including, where feasible, naturalist personnel to serve the interests of cruise ship and State ferry travelers for the purpose of providing enrichment experience as to the nature, use, and values of the natural resources and cultural heritage of Southeast Alaska.	16. Cooperate with the State, other Federal agencies, and interest groups to provide interpretive services and recreation information for the public. Develop audio-visual and other programs that emphasize cost effectiveness and reduce emphasis on the need for staffing or high cost facilities.	Clarification
18. Work with people in the law enforcement, legal, social and educational fields to reduce vandalism in recreation areas.	Omitted	Included in Protection Element
19. Assure that a complete inventory and systematic evaluation is made of the recreation opportunity supply, use patterns and demand trends during the allocation and prescription phases of planning. Where the study plan or scale of the project indicates a need, additional detail recreation inventory work with site-specific recommendations will be done as part of the interdisciplinary team process during the implementation stage of planning.	Omitted	Referred to Forest planning
20. Include IDT specialists in the design and location of roads, utilities buildings and other associated facilities and development actions to reflect recreation and visual needs and help assure	17. Schedule resource development activities in areas which will not adversely impact currently utilized and other recreation and visual resources to the extent possible.	Clarification

	18. When nonrecreation development must be located in areas currently used for recreation, design development to minimize adverse impacts on the recreation and visual resources of the area. In areas where primary management emphasis is on commodity development, plans, establish standards and guidelines for mitigating adverse effects and for providing recreation opportunities where feasible and compatible with other resource objectives of the area in Forest plans.	Clarification of Area Guide Policy 20.
	19. In areas where Forest plans have indicated that primary emphasis is on commodity production, protect important visual values without significant decrease of commodity outputs by emphasizing full utilization of all implementation measures and techniques available to meet Adopted Visual Quality Objectives established as a result of the Forest planning process.	Clarification of Area Guide Policy 20.
21. Work with research agencies on programs for improving our knowledge base involving recreation supply and demand. These programs must relate to the ability of the land to meet the needs of people now and in the future and involve economic and social values as well as the existing recreation opportunity supply.	20. Work with other agencies on programs for improving our knowledge base involving recreation supply and demand.	Clarification
No Area Guide Policy	21. Locate new recreation facilities to utilize public transportation systems and facilitate energy-efficient forms of recreations uses.	RPA
No Area Guide Policy	22. Implement management actions that result in increasing receipts to recover more of the operation and maintenance costs of charge sites and reduce competition with the private sector.	RPA
	23. Recognize that recreation use radiates from communities and service centers; encourage private land and capital to develop services and accomodations to meet demands. Complement	RPA

CULTURAL RESOURCES

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
1. Assure compliance with Federal antiquities legislation by:	1. Manage cultural resources as a non-renewable National heritage.	Clarification
a. Including an archeologist on the interdisciplinary team to conduct an archeological investigation as part of management plans where cultural resources are likely to be involved.	a. Assure cultural resource specialists input to project planning at the earliest possible time.	
b. Evaluating presently known cultural resources for nomination to the National Register of Historic Places and continuing nomination as eligible sites are discovered.	b. Evaluate cultural resources for inclusion in the National Register of Historic Places.	
c. Instituting procedures to assure that Forest Service plans and programs contribute to the preservation and enhancement of non-Federally owned cultural resources.	c. Forest Service plans and programs affecting cultural resources need to contribute to the preservation and enhancement of cultural resources and assure access to sites or resources important to traditional Native religious practices, rites, or ceremonies.	
d. Planning forest management activities involving ground disturbance so that adverse impacts on cultural resources are avoided or, if unavoidable, to arrive at mutually satisfactory procedures for mitigating adverse impacts by consultation and Service plans and programs will have on cooperation with the State Historic Preservation Officer and the National Advisory Council on Historic Preservation.	d. Avoid adverse effects where possible, or develop mitigation alternatives in consultation with the State Historic Preservation Officer and Advisory Council on Historic Preservation, after obtaining and considering input from affected Native groups.	
2. Encourage and cooperate with recognized educational institutions in the identification and study of historic and archelogical sites.	2. Encourage and cooperate with qualified museums, universities, and private research institutions in the identification evaluation, and interpretation of cultural resources.	Clarification
3. Acquaint and orient field personnel in methods of recognizing and describing cultural resources and in understanding the provisions of Federal antiquities legislation and the regulations developed to implement it.	3. Provide cultural awareness opportunities for all Forest Service personnel to illustrate and foster an awareness and understanding of the variety, complexity, and adaptability of prehistoric and historic Native cultures of the Region.	Clarification--Joint Congressional Resolution on Native American Freedom of Religion.

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
4. Develop an interpretive management program for archeological or historic sites in cooperation with the State of Alaska.	4. Cooperate with the State and Native owners of cultural resources to develop programs for public interpretation of and education about cultural resources and their management on National Forest System lands.	Clarification--Joint Congressional Resolution on Native American Freedom of Religion, and Archaeological Resources Protection Act.
5. No Area Guide policy.	5. Develop cooperative agreements with Native groups to protect and manage cultural resources.	Clarification--Joint Congressional Resolution on Native American Freedom of Religion, Archaeological Resources Protection Act, Alaska Lands Act.

Area Guide Policies	Regional Plan Policies	Reasons for Change/Reference
Resource Management		
1. Transportation planning will be integrated with present and future land management plans at the allocation, prescription and implementation levels of planning. Plans will identify, as far as possible, what transportation modes will be developed for a given area.	Omitted	This policy is incorporated into the Transportation and Utility Corridor policy
Prescriptive plans will provide for special study of specific options and will indicate where transportation facilities are likely to be located. These locations may be modified by further IDT input and economical and environmental analysis. The Forest plan will attempt to specify areas such as proposed road corridors, applicable yarding methods, and the type of water transport to be used where logging is contemplated.	Omitted	Referred to Forest planning
2. Project plans will include the final determination of transportation modes and related facilities and their specific locations.	Omitted	Referred to Forest planning
3. An economic and environmental analysis will be used to determine facility standards at the prescription level and these standards will be met during the implementation phase. Forest prescriptive and project plans will not preclude future transportation development appropriate to the particular land use designation.	Omitted	Referred to Forest planning
4. The Forest Service will continue to engage in comprehensive and coordinated transportation planning with other Federal, State, and local government agencies to provide a Forest-wide perspective of how individual networks fit into the overall transportation system.	Omitted	This policy is incorporated into the Transportation and Utility Corridor policy

5. Transportation modes and their related facilities will be located, designed and constructed to minimize change to the environment and resources and will be in compliance with policies as established in the resource accounts.	Omitted	Referred to Forest planning
6. Local communities will be involved in the transportation system planning process.	Omitted	This policy is incorporated into the Transportation and Utility Corridor policy
	1. Transportation Resource Management	
7. Logging roads scheduled to be placed in storage category after use will be incorporated as part of the trail system whenever recreation or other resource needs warrant.	a. The Forest Service will employ a wide range of choices in methods for managing roads. The following goals will be considered: 1) A range of recreational experiences will be provided from pedestrian only to full-use motorized vehicles. 2) The need for dispersal of people to accomodate fishing and hunting and non-consumptive use of wildlife. 3) The long term land management objectives of the accessible land area. 8. The Forest Service endorses cooperative use of the Forest Development Road System for hauling of commercial products recognizing that user conflicts will occur in some situations. The commerical user hauling from other than National Forest lands is expected to assume a share of the original construction and maintenance costs of the roads used. The costs will be proportioned on the basis of the use of the hauler and the total use of the road. c. Conservation of petroleum energy supplies will be considered in the location, design, construction, and operation of the transportation system. d. Roads which are not part of the permanent transportation system will have vegetation reestablished within 10 years following termination of the	Clarification and elaboration of transprotation policy to conform to RPA and other direction

	e. Roads will be constructed in the most cost-effective manner, considering other resource values. The Forest Highway Program and joint financing of construction will be used as methods to construct the facilities to a higher standard where appropriate.	
	2. Transportation and Utility Corridors	
1. Transportation corridor allocation and development will be performed in compliance with the and criteria established in the other resource accounts. Projects will be planned, located, designed and constructed to recognize othjer resource values and to minimize anticipated adverse environmental impacts.	a. Transportation and utility corridor planning and development will be in compliance with the policies and criteria estalblishedin this and other elements. Transportation facilities constructed by the Forest Servie will meet standards required for the use, management and protection of the National Forest, considering safety, costs of transportation (including operation and maintenance), and impacts on other resources.	Clarification; See EIS - Transportation and Utility Corridors
2. Transportation corridor alteration and development will be coordinated with the Canadian, Federal, State, and local government agencies having jurisdictional, delegated or assigned responsiblities connected with either corridor development or land management.	b. Transportation and utility corridor planning and development will be coordinated with the Canadian, Federal, State and local government agencies as well as private land owners. Transportation connections by the Forest Service will not be made between communities or emerging communities without the participation and collaboration of State and local governments, communities and affected individuals. c. The Forest Service acknowledges that the State of Alaska has identified several natural transportation corridors in Southeast and Southcentral Alaska for possible land transportation facilities. The primary function of these corridors is for the transportation of people, goods and services between communities. Because the corridors parallel the major rivers and marine routes of the area, high fisheries, wildlife, estuarine, recreational, visual and other values are affected. Data collection to define the extent of conflicts with the construction and usage of these corridors is needed. Consideration of the allocation of lands along these corridors for transportation and utility purposes is required in Forest planning. Allocated	See EIS - Transportation and Utility Corridors

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
3. The Forest Service as the principal land manager in Southeast Alaska will review all proposals and plans of any Federal, State or local government agency, firm or individual for any development of a new transportation corridor within the Tongass National Forest. Changes to an existing corridor development within the Tongass National Forest shall be contingent upon the appoval of the appropriate Forest Service line officer. Approval will require documentation of sufficient public involvement. The Forest Plan will indicate the locations of transportation corridors	d. Transportation planning will be integrated with present and future land management plans to the extent feasible. Forest plans will show anticipated forest arterial and major collector corridors. Plans will identify, as far as possible, what modes of transportation will be developed for a given area. Water transportation modes and anticipated land-water transfer facilities will be specified where logging activities, ferry terminals, public access, barge ramps, and similar facilities are intended. The likely corridor locations for other transportation facilities will be subsequently developed.	Clarification and incorporation of Resources Management Policy #3 from Area Guide
4. Approved transportation corridor proposals and plans will be integrated with present and future land management plans at all planning levels to utilize each corridor resource to the greatest extent possible.	Omitted	Policy incorporated into Transportation Resource Management Policy
No Area Guide policy	e. Approved transportation and utility corridor proposals and plans will be integrated with present and future land management plans to utilize each corridor resource to the greatest extent possible. Corridors for future utilities will follow land transportation routes to the extent practicable and appropriate. Electrical transmission facilities constructed and maintained without road access need not follow road corridors. f. Existing transportation corridors are recognized as the combination of land, water, and air transportation modes which provide transportation access between communities and other developed use areas in Alaska. Existing utility corridors are those land and water based routes over which pipelines, electrical transmission lines, or communication lines traverse where utilities are being provided from the source to a community or major user or between communities.	See EIS - Transportation and Utility Corridors

LANDS

Area Guide Policies	Regional Plan Policies	Reason For Change/Reference
1. The Forest Service will work actively with State and local governments to make lands available for needed private and public community development.	1. Work actively with State and local governments for full compliance with the intent of the Statehood Act. To the extent possible, fullfil the needs for community expansion and recreational areas as well as for prospective community centers.	Clarification
2. Ownership adjustment needs will be identified as part of the land management planning process. Emphasis will be directed toward State selections adjacent to existing communities. The State plans to identify priority selections by June 1, 1977, and general program selections by December 1977. It is Forest Service policy to work with State agencies and local communities to substantially eliminate Forest ownership in the adjacent to communities where State, Borough or community governmental jurisdiction should logically preside.	2. Do not authorize uses that can reasonably be accomodated on other lands.	Clarification Some details contained in Human and Commuity Development Element
3. There is to be full compliance with the intent of the Statehood Act and, to the extent possible, there will be fulfillment of the needs and desires of the State and its people for National Forest lands for community expansion and recreational areas as well as for prospective community centers.	Omitted	Combined with Area Guide policy 1 as Regional Plan policy 1 above.
4. Those priority State selections submitted by the State by June 1977 will be considered for planning purposes.	Omitted	No longer relevant
5. Forest Supervisors will continue to work with the State and local authorities to identify local selection needs and to overcome associated land status problems.	Omitted	See Regional Plan policy 6

6. Uses that can reasonably be accommodated on other lands will not be authorized on the Tongass National Forest. (See FSM Emergency Directive 16).	Omitted	See Regional Plan policy 2
7. Existing isolated hunter cabin, recreation residence and residence permits will not be closed unless required by the terms of the permit or unless there is a demonstrated higher public need. Existing recreation residences and residence permits located in approved groups will be continued subject to the provisions of the permits.	3. Allow existing isolated hunter cabins, recreation residences and residence permits unless there is a demonstrated higher public need. Continue existing recreation residences and residence permits located in approved groups subject to the provisions of the permits.	Clarification
8. Outfitting and guiding activities associated with National Forest Lands will be administered under the occupancy permit system.	4. Administer outfitting and guiding activities associated with National Forest lands under the occupancy permit system with consultation and coordination with appropriate agencies.	Clarification
9. Decisions on occupancy pemits will be evaluated for compatibility with long-term public interest based on a consideration of environmental values, economic feasibility and a determination of social and/or economic benefit. Permits will not be approved solely for the purpose of creating a business opportunity.	5. Evaluate decisions on occupancy permits for compatibility with long-term public interest based on a consideration of environmental values, economic feasibility and a determination of social and/or economic benefit. Do not approve permits solely to create business opportunities.	Clarification
10. A land adjustment plan will be prepared by 1981, following the Tongass Land Management Plan. Emphasis will be directed toward resolving management problems represented by isolated private land holdings in critical locations.	6. Prepare a landownership adjustment plan. Emphasize improved land ownership patterns and management opportunities resulting from State and Native land conveyances. Consider acquisition of isolated land in other ownerships at critical location in light of possible mutual benefit to landowners and the Forest Service.	Clarification
11. Special use permits authorizing non-proifit hatcheries will be issued to qualified applicants holding State hatchery permits on sites cleared for occupancy through an environmental analysis and/or environmental impact statement. State aquaculture site needs will be handled in coordination with the Alaska Department of Fish and Game or other agencies and in compliance with the	Omitted	Content included in aquaculture policies of Fish Element

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
No Area Guide policy	7. Review and adjust special use fees on a planned basis to comply with the Federal Land Policy and Management Act.	Federal Land Policy and Management Act of 1976
No Area Guide policy	8. Survey and maintain boundary lines resulting from State and Native conveyances and boundary lines presenting significant potential management problems on a planned basis. Monitor unsurveyed boundary lines to minimize future problems and assist in establishing survey priorities.	Changing Ownership in Alaska
No Area Guide policy	9. Identify areas suitable and representative of various ecosystems as part of a Research Natural Areas/Ecological Reserves system. Select each Research Natural Area to represent the greatest number of ecological and geological type needs possible, locating sites on lands already withdrawn when appropriate, by following in each Forest Supervisor's Area the sequential planning and selection steps contained in the implementation plan for establishing Research Natural Areas/Ecological Reserves (Regional Plan Appendix B).	National Forest Management Act

PROTECTION

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
1. In the majority of cases the Forest Service believes that it is the responsibility of Forest users to provide for their own welfare and safety while working in, or visiting, the generally undeveloped portions of the Forest. The Forest Service will assist users in assuming this responsibility through programs of public information and education.	1. In the majority of cases , it is the responsibility of Forest users to provide for their own welfare and safety while working in, or visiting, the generally undeveloped portions of the Forests. Assist users in assuming this responsibility through programs of public information and education.	Clarification
2. In the event of an emergency involving an imminent threat to life and property, the Forest Service will render all availabe assistance requiring use of Forest Service resources.	2. In the event of an emergency involving an imminent threat to life and property, render all available assistance.	Clarification
3. In the event of a major disaster, the Forest Service will assist State and local governments in carrying out their responsibilities to alleviate suffering and damage. To effect such assistance, the Forest Service will develop a coordinated disaster plan with other agencies responsible for disaster relief.	3. In the event of a major disaster, assist State and local governments in carrying out their responsibilities to alleviate suffering and damage. To effect such assistance, develop a coordinated disaster plan with other agencies responsible for disaster relief.	Clarification
4. Legal responsibilities for search and rescue lie with the U.S. Coast Guard and the Alaska State Troopers. When emergencies involving search and rescue occur on National Forest lands, however, the Forest Service will, upon request from the above agencies, assign designated personnel to assist. Forest Supervisors will cooperate with Federal and State agencies and local governments in preparing search and rescue plans for each area that define the Forest Service role in assisting search and rescue operations.	4. Legal responsibilities for search and rescue lie with the U.S. Coast Guard and the Alaska State Troopers. When emergencies involving search and rescue occur on National Forest lands, upon request from the above agencies, assign personnel to assist. Cooperate with Federal and State agencies and local governments in preparing search and rescue plans that define the Forest Service role in assisting search and rescue operations.	Clarification

Area Guide Policies	Regional Plan Policies	Reason for Change/Reference
5. Through public information programs, explain the impact of vandalism and encourage more positive use of the Forest and more considerate treatment of others.	5. Through public information programs, explain the impact of vandalism and encourage more positive use of the Forest and more considerate treatment of others.	No Change
6. Emphasize cooperative law enforcement activities with Alaska State Troopers in dealing with and correcting violations of State and Federal laws on National Forests.	6. Cooperate with Alaska State Troopers for enforcement of State laws for protection and safety of Forest users and their property. Utilize trained Forest Officers to enforce Federal laws and regulations for protection of National Forest resources and property.	Clarification
No Area Guide policy	7. Participate with the State of Alaska and other cooperators in development and implementation of the Alaska Avalanche Warning System and other related avalanche control activities.	Incorporation of ongoing State and Private Forestry Program.

APPENDIX 2 - BIBLIOGRAPHY

Alaska Department of Commerce and Economic Development, 1976.
Timber and Fishing in Southeast Alaska: Current Challenges to Full Employment. State of Alaska; Juneau, Alaska.

Alaska Department of Fish and Game.
Alaska Wildlife Management Plan, A Public Proposal for the Management of Alaska's Wildlife. State of Alaska; Juneau, Alaska. Project W-17-R.

Alaska Department of Fish and Game, 1980.
Preliminary Forecasts and Projections for 1980 Alaska Salmon Fisheries. State of Alaska; Juneau, Alaska. Informational Leaflet No. 183.

Alaska Department of Fish and Game, 1977.
Alaska Salmon Fisheries Plan, Provisional Draft. State of Alaska; Juneau, Alaska.

Alaska Department of Labor, 1980.
Alaska 1980 Populations: A Preliminary Look. State of Alaska; Juneau, Alaska. (preliminary draft)

Alaska Department of Natural Resources, 1976.
Alaska Outdoor Recreation Plan 1976-80. Division of Parks; State of Alaska; Juneau, Alaska.

Alaska Department of Labor, 1979.
Alaska Populations Overview. State of Alaska; Juneau, Alaska.

Arabic, E. L., A. F. Garbarro and W. G. Workman, 1979.
Chugach Land Management Plan: Supply and Demand Assessment for Resources of the Chugach National Forest. USDA Forest Service; Juneau, Alaska.

Balding, G. O., 1976.
Water Availability and Use in Alaska. U.S. Department of Interior Geological Survey -- open file report 76-513.

Butcher, W. R., N. K. Whittlesby, and J. F. Orsborn, 1972.
Economic Value of Water in a Systems Context. Report to the National Water Commission. National Technical Information Service; Springfield, Virginia (PB 210357).

Clark, Roger and Robert Lucas, 1978.
The Forest Ecosystems of Southeast Alaska, Outdoor Recreation and Scenic Resources. USDA Forest Service, Pacific Northwest Forest and Range Experiment Station; Portland, Oregon. Technical Report PNW-66.

Socio-Economic Variables that may Affect Wilderness Use in Southeast Alaska. A consulting report (unpublished).

Dyrland, Richard D., 1973
Resource Capabiliy System: Basic Economic Concepts and Procedures. Division of Watershed Management; USDA Forest Service.

Dwyer, J. F., J. R. Kelly and M. D. Bowes, 1977.
Improved Procedures for Estimating the Contribution of Recreation to National Economic Development. Report No. 128. Water Resources Center; University of Illinois at Urbana-Champaign.

Forest Service, 1981.
Biological Evaluation R-10-81-1: Spruce Bark Beetle, Chugach National Forest and Adjacent Lands. USDA Forest Service, Juneau, Alaska.

Forest Service, 1981.
Sport Fisheries of the Tongass and Chugach National Forests by Sheridan and Sullivan, Alaska Region Report 128. USDA Forest Service; Juneau, Alaska.

Forest Service, 1980.
An Assessment of the Forest and Range Land Situation in the United States. USDA Forest Service; Washington, DC. FS-345.

Forest Service, 1980.
Bird Population Responses to Clearcutting in the Tongass National Forest of Southeast Alaska. USDA Forest Service; Juneau, Alaska. Report No. 71.

Forest Service, 1979.
Alternative Program Directions 1981-2030. USDA Forest Service; Washington, DC. (review draft)

Forest Service, 1979.
Visual Character Types. USDA Forest Service; Juneau, Alaska. Series No. R10-63.

Forest Service, 1978.
Current Situation OVerview, Southcentral Alaska. USDA Forest Service; Juneau, Alaska.

Forest Service, 1978.
Environmental Impact Statement, for the Chugach Moose-Fire Management Program. USDA Forest Service; Anchorage, Alaska.

Forest Service, 1978.
RARE II Alaska Supplement to Draft Environmental Impact Statement. Roadless Area Review and Evaluation. USDA Forest Service; Juneau, Alaska. Series No. R10-26.

Forest Service, 1978.
Resources Program and Assessment Physical and Bilogical Effect Indicators for 1980 RPA Program Update. USDA Forest Service; Juneau, Alaska. (unpublished)

Forest Service, 1978.
Tongass Land Management Plan. Draft Environmental Impact Statement. USDA Forest Service; Juneau, Alaska. Series No. R10-29. 199 pp. illus.

Forest Service, 1977.
Coefficient to Convert Acre Equivalents to Recreation Visitor Days (RVD) of Fishing, Hunting, and Wildlife Vewing. Letter to the Regional Forester from Director of Wildlife and Fisheries Management. USDA Forest Service; Washington, DC. File No. 2630-12/9/79.

Forest Service, 1977.
Forest Statistics of the United States, Review Draft - all data subject to revision. USDA Forest Service; Washington, DC.

Forest Service, 1977.
Southeast Alaska Area Guide. USDA Forest Service; Juneau, Alaska.

Forest Service, 1975.
Preliminary Central Interior Area Guide. Alaska Planning Team. USDA Forest Service; Anchorage, Alaska.

Forest Service, 1975.
Preliminary Yukon-Porcupine Area Guide. Alaska Planning Team. USDA Forest Service; Anchorage, Alaska.

Forest Service, 1974.
The Visual Management System, Agricultural Handbook 462. USDA Forest Service; Washington, DC.

Forest Service, 1973.
Silvicultural Systems for the Major Forest Types in the United States, Agricultural Handbook 145. USDA Forest Service; Washington, DC.

Forest Service, 1965.
Silvics of Forest Trees of the United States, Agricultural Handbook 271. USDA Forest Service; Washington, DC.

Forest Service, et. al., 1976.
Logging and Fish Habitat. USDA Forest Service, Alaska Department of Fish and Game, Alaska Department of Natural Resources; Juneau, Alaska.

Glass, Ronald J., 1978.
Tongass Land Management Plan, An Assessment of the Demand-Supply Situation for Southeast Alaska TImber (Working Report). USDA Forest

Heit, C. D., 1968.
Thirty-five Year's Testing of Tree and Shrub Seed, Journal of Forestry, 66:632-634.

Hendee, J. C., G. H. Stankey and R. C. Lucas, 1978.
Wilderess Management. Publication 1365. USDA Forest Service; Washington, DC.

Hutchison, O. K. and V. J. LaBau, 1975.
The Forest Ecosystem of Southeast Alaska, 9. Timber Inventory Harvesting Marketing and Trends. Technical Report PNW-34. USDA Forest Service, Pacific Northwest Forest and Range Experiment Station; Portland, Oregon.

Institute of Social and Economic Research, 1978.
National Demand for Developed Recreation and Tourism in Southeast Alaska. An Overview. USDA Forest Service; Juneau, Alaska.

Isaac, Leo A., 1956.
Place of Partial Cutting in Old Growth Stands of the Douglas-Fir Region, Resident Paper 16. USDA Forest Service, Pacific Northwest Forest and Range Experiment Station; Portland, Oregon.

Joint Southeast Alaska Regional Planning Team, 1980.
Comprehensive Salmon Plan for Southeast Alaska, Phase I. Juneau, Alaska. (review draft)

Jones, L., 1961.
Effects of Light on Germination of Forest Tree Seed. Int. Seed Test. Assn. Proc. 26:437-452.

Jungst, Steven E.
Wilderness Use Projection; The State of Available Techniques. Progress Report No. 1. Department of Forestry, Iowa State University; Ames, Iowa.

Knetsch, J. L., R. E. Brown and W. J. Hansen, 1977.
Estimating Expected Use and Value of Recreation Sites. In planning for tourism development, quantitative approaches. Edited by C. Gearing, W. Swart, and T. Var. Praeger Publishers, New York pp. 103-115.

Krutilla, J. V., and A. C. Fisher, 1975.
The Economics of Natural Environments. The Johns Hopkins University Press.

Lundeen, J.L., 1977.
The Use of Digital Simulation Models to predict the effects of vegetation cover change on streamflow and downstream water use. Ph.D. disseration. Stanford Unviersity

Miller and Associates, 1979.
An Analysis of Selected Elements of the Alaskan Salmon Resouce Development Program. A Report to the Aquaculture Policy Study Group of the Alaska Legislature; Juneau, Alaska.

Mills, M.J.
Annual Perforance Report for Alaska Statewide Sport Fish Harvest Studies. Alaska Department of Fish and Game; Juneau, Alaska. Study SW-1-A.

Moncur, J.E.T., 1971.
The program planning approach to valuation of water in alternative uses. Ph.D. dissertation. Washington State Unviersity; Pullman, Washington.

Rogers, George W., 1978.
An Assessment of Recreational and Subsistence Demands in Southeastern Alaska. Institute of Social and Economic Research--University of Alaska. USDA Forest Service; Juneau, Alaska.

Rogers, George W. and Glass, Ronald J., 1978.
The Supply-Demand Situation for Southeastern Alaska Salmon. Institute of Social and Economic Research, University of Alaska. USDA Forest Service; Juneau, Alaska.

Rogers, George W. and Hart B., 1978.
Tongass Land Management Plan. Socio-economic working report. USDA Forest Service; Juneau, Alaska. TLMP 1.

Ruth, Robert H. and Harris A. S., 1979.
Management of Western Hemlock-Sitka Spruce Forest for Timber Production. USDA Forest Service PNW-88; Pacific Northwest Range and Experiment Station.

Schmiege, Donald C., A. E. Helmero and D. M. Bishop, 1974.
The Forest Ecosystem of Southeast Alaska. 8 Water. Pacific Northwest Forest and Range Experiment Station; Portland, Oregon. Technical Report PNW-28.

Schorn, John W., O.C. Wallmo and Matthew D. Kirchoff, 1979.
Seasonal Distribution and Habitat Use by Sitka Black-Tailed Deer in Southeastern Alaska. Alaska Department of Fish and Game; Juneau, Alaska.

Scott, Michael J., 1978.
Southcentral Alaska's Economy and Population, 1965-2025. A base study and projection report of the economic task force. Suthcentral Alaska water resources study (level B) to the Alaska Water Study Committee. University of Alaska; Fairbanks, Alaska.

Sheridan, W. L., 1977.
The Temperature Sensitive Stream. USDA Forest Service R-10; Juneau, Alaska.

Thompson, Dorthy H., 1978.
The Wilderness Act, and Overview. Institute of Social and Economic Research, University of Alaska; Fairbanks, Alaska.

University of Alaska, 1981.
Alaska Public Survey. Institute of Social and Economic Research; Fairbanks, Alaska.

University of Alaska, 1980.
Participation, Preferences, and Characteristics of Outlying-Cabin Use in Alaska National Forests, School of Agriculture and Land Resources Management; Fairbanks, Alaska.

University of Alaska, 1978.
National Demand for Developed Recration and Tourism in Southeast Alaska, and Overview. Institute of Social and Economic Research; Fairbanks, Alaska.

University of Alaska, 1978.
Resources of the Copper River Delta planning unit; some economic considerations report for the U.S. Forest Service. University of Alaska; Fairbanks, Alaska.

U.S. Department of Commerce, 1977.
Consumer Income, Household Money Income in 1975, by Housing Tenure an Residence, for the United States, Regions, Divisions, and States, (spring 1976 survey of incoe and education.) Department of Commerce, Bureau of Census; Washington D.C. Series P-60, No. 128.

Viereck and Little, 1972.
Alaska Trees and Shrubs, U.S. Department of Agriculture Handbook 410, USDA Forest Service; Washington, D.C.

Zasada, John C., R.A. Werner, K. Van Cleve, J.A. McQueen, and E. Nyland, 1977.
Forest Biology and Management in High-Latitude North American Forests Symposium Proceedings, USDA, Forest Service; Fairbanks, Alaska.

Zasada, John C. and Gregory, Robert A., 1969.
Regeneration of White spruce with Reference to Interior Alaska: A Literature REview. Usda Forest Service Resident Paper PNW-79, Pacifi Northwest Forest and Range Experimental Station; Portland, Oregon.

Zasada, John C. and Viereck, Leslie A., 1970.
White Spruce Cone and Seed Production in Interior Alaska, 1957-1968. USDA Forest Service Paper PNW 129, Pacific Northwest Forest and Range Experiment; Portland, Oregon.